Installation instructions for:

INTERCOOLED SUPERCHARGER SYSTEM

2005-2007

FORD MUSTANG 4.6L 3V

Step-by-step instructions for installing the best in supercharger systems.

PREMIUM FUEL REQUIRED

ATTENTION!
Your MAGNA CHARGER intercooler kit
Is sensitive to corrosion!
Take care of if by using 50/50
Anti-freeze with de-ionized water.

Magnuson Products Inc
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89-89-65-005 Rev F

INSTALLATION MANUAL
Magna Charger
FORD 4.8 Liter 3V Engine,
2005-2007 MUSTANG

Please take a few moments to review this manual thoroughly before you begin work:
A quick parts check to make certain your kit is complete (See shipper parts list in this package). If you discover shipping damage or shortage, please call our office immediately. Take a look at exactly what you are going to need in terms of tools, time, and experience. Review our limited warranty with care. When unpacking the supercharger kit **DO NOT** lift the supercharger assembly by the black plastic bypass actuator. This is pre-set from the factory and can be altered if used as a lifting point!

Caution: Relieve the fuel system pressure before servicing fuel system components in order to reduce the risk of fire and personal injury. After relieving the system pressure, a small amount of fuel may be released when servicing the fuel lines or connections. In order to reduce the risk of personal injury, cover the regulator and fuel line fittings with a shop towel before disconnecting. This will catch any fuel that may leak out. Place the towel in an approved container when the job is complete.

Use only premium fuel, 91 octane or better.

Magna Charger systems are manufactured to produce about 20 RWHP per pound of boost at sea level. High altitudes will produce different numbers.

Our Magna Charger kits are designed for engines in good mechanical condition only. Installation on high mileage or damaged engines is not recommended and may result in engine failure, for which we are not responsible. Magna Charger is not responsible for the engine or consequential damages.

Aftermarket engine re-calibration devices that modify fuel and spark curve (including, but not limited to programmers) are not recommended and may cause engine damage or failure. Use of non-Magna Charger approved programming will void all warranties. If you have any questions, call us.

After you finish your installation and road test your vehicle, please fill out and mail in the limited warranty card, so we can add you to our files (this is important for your protection).

- A new fuel filter is recommended at the time of supercharger installation.
- Stock application Motorcraft spark plugs are recommended
- Drive belt= Gates# K061247
- Air Filter= K&N# 33-2298

Tools Required:

Metric wrench set
¼" - 3/8" and ½" drive metric socket set (Standard & Deep)
3/8" and ½" drive Foot pound and inch pound torque wrenches
Phillips and flat head screwdrivers
Fuel line quick disconnect tools (included in kit)
Small or angled 3/8" drill motor
Drain pan
Hose cutters
Hose clamp pliers
Safety glasses
Metric Allen socket set 3/8" drive
Electric drill and drill bits

Contact Information:
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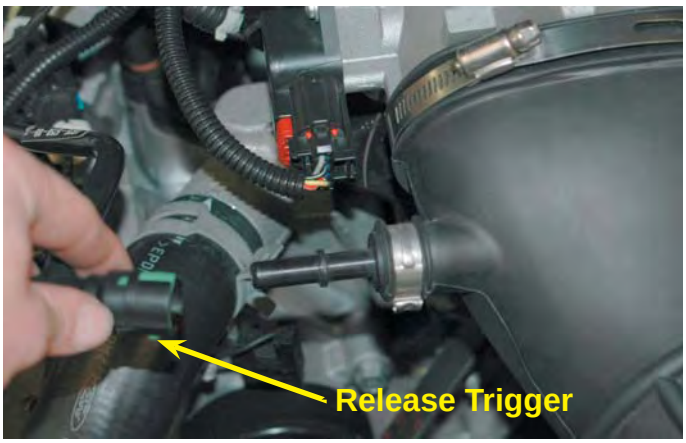
1. Relieve the pressure in the fuel tank by removing the cap and re-installing it.

   IMPORTANT! Ensure vehicle has 91 or higher-octane fuel in it prior to supercharger installation!

2. Disconnect the negative (-) battery clamp using a 7mm wrench.

3. Remove the Positive Crankcase Ventilation (PCV) line from the air tube by pressing the release trigger in the connector and pulling it free. Follow the line to its connection on the cam cover and remove the line completely from the motor.

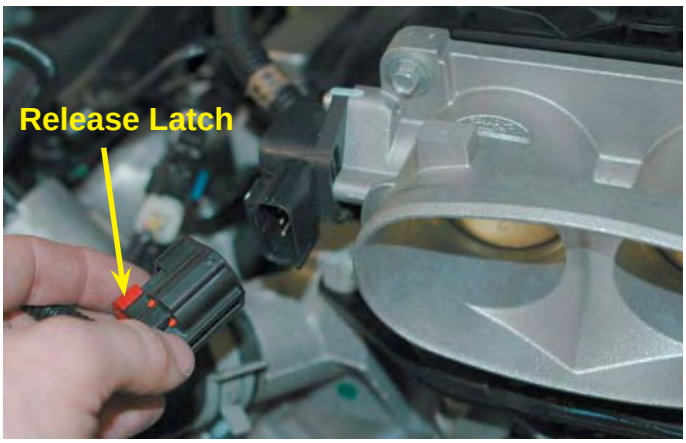


4. Loosen the air tube clamp at the throttle body using a 8mm nut driver or straight blade screwdriver.

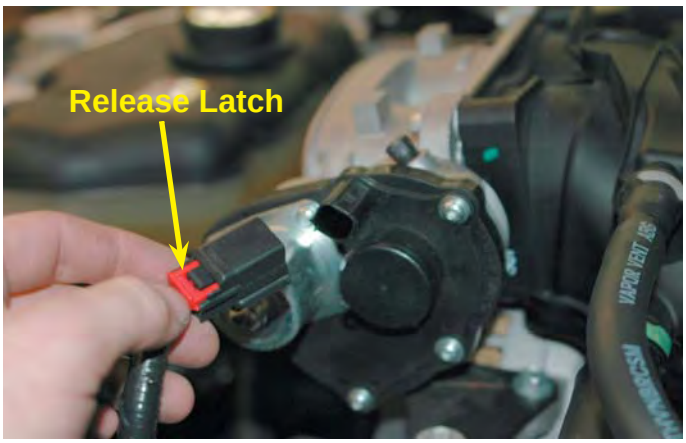
5. Loosen the air tube clamp at the air box using a 8mm nut driver or straight blade screwdriver

6. Remove the air tube completely from the vehicle.

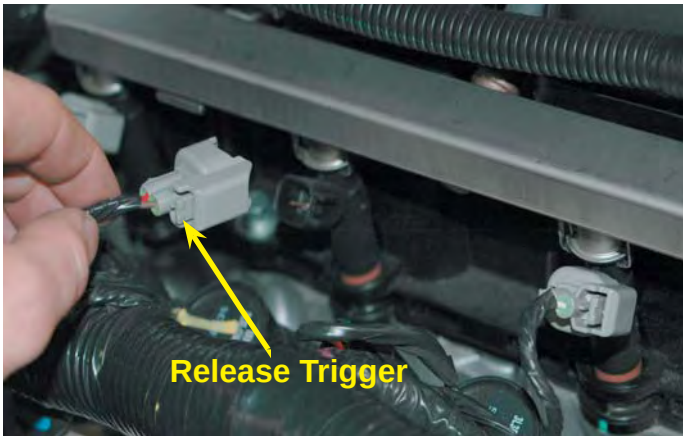
7. Remove the Throttle Position Switch (TPS) connector by sliding the red release latch outward and pulling the connector free.



8. Remove the Electronic Throttle Control (ETC) connector by sliding the red release latch outward and pulling the connector free.

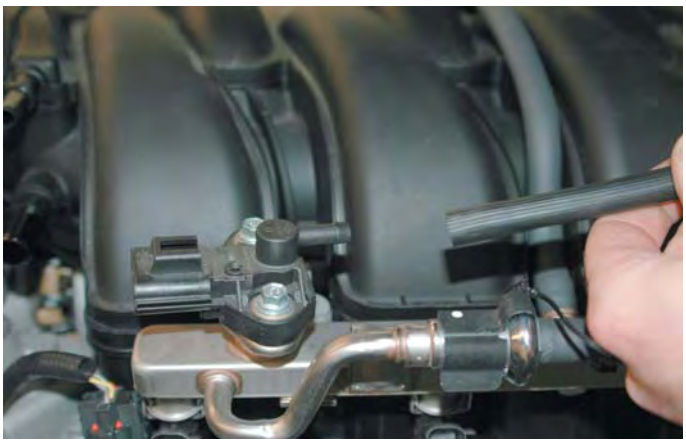


9. Disconnect the (8) fuel injector connectors by squeezing the release trigger and pulling the connectors free.



10. Remove the Fuel Pressure Sensor (FPS) connector by squeezing the release trigger and pulling the connectors free.

11. Remove the vacuum line to the FPS.

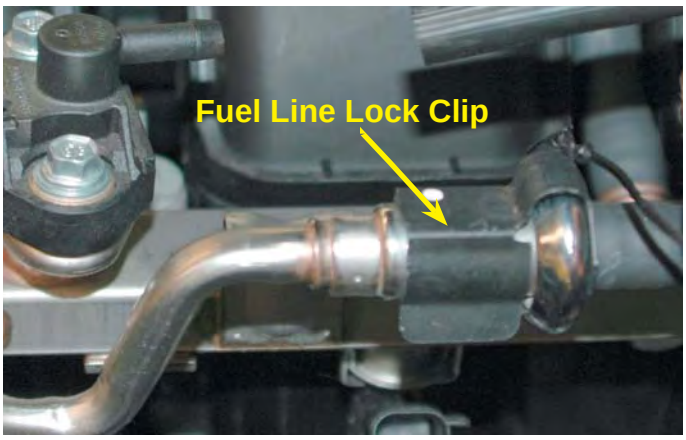


12. Remove the (2) battery cable anchors by pulling them free from the fuel rail attachment bolts.

13. Remove the Evaporative Control (EVAP) line behind the throttle body by pressing in on the white release latch and pulling the line free.

14. Remove the PCV line from the intake manifold by pressing the release trigger in the connector and pulling it free. Follow the line to its connection on the cam cover and remove the line completely from the motor.

15. Remove the fuel line lock clip from the fuel rail by gently prying it free.



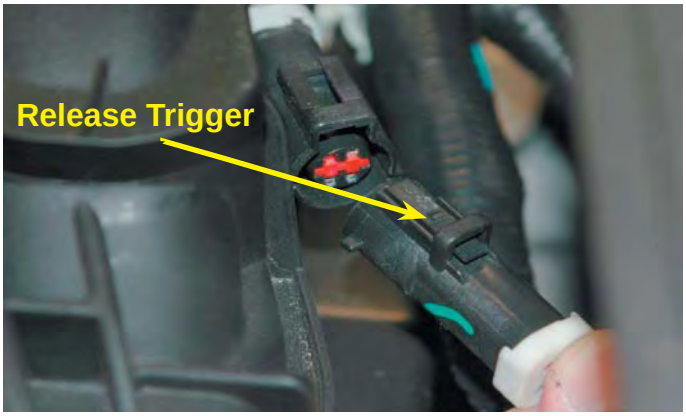
16. Use the supplied tool to remove the fuel line from the fuel rail. CAUTION! WEAR EYE PROTECTION! The fuel line will be under pressure. Extinguish any open flame or source of ignition. Snap the tool on to the fuel rail in place of the lock clip. Push the tool towards the fuel line while pushing the line towards the tool. Pull back on the line and it will come free. Use a clean shop towel to collect any spilled fuel.

17. Remove the (4) bolts that secure the fuel rails to the intake manifold using a deep 8mm socket wrench.

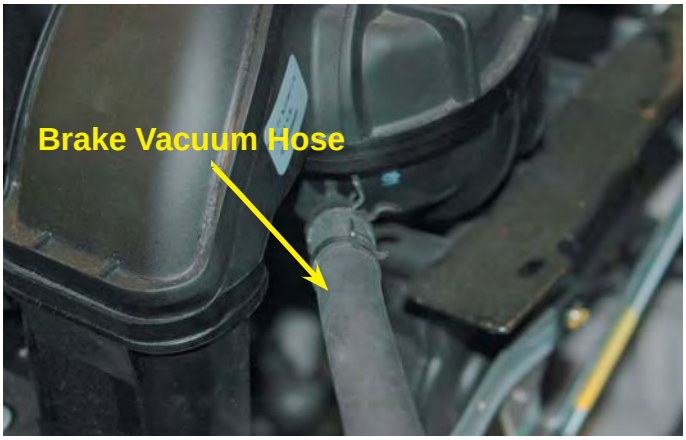
18. Remove the fuel rails complete with injectors from the intake manifold, by pulling up firmly on the fuel rails.

19. At the rear of the intake manifold locate the electrical connector for the manifold servo- motor.

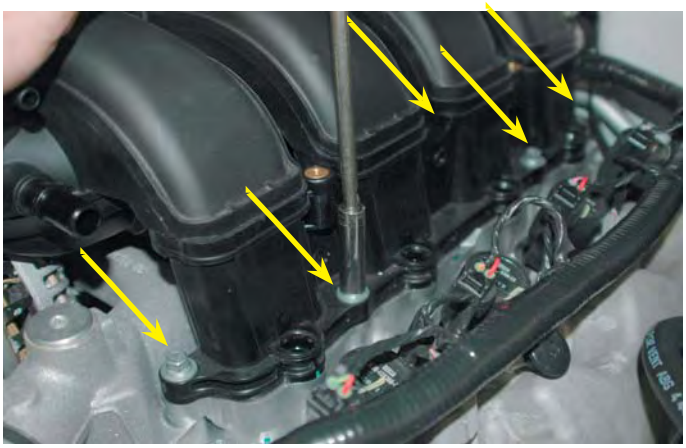
20. Press the release trigger and pull the connector apart.



21. At the rear of the intake manifold remove the brake vacuum hose by squeezing the ears of the clamp using a pair of pliers and pulling the hose free.

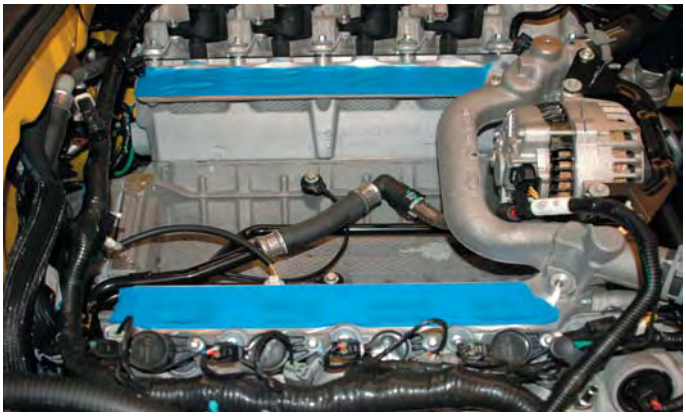


22. Remove the (5) bolts on each side of the intake manifold using a 10mm socket wrench.

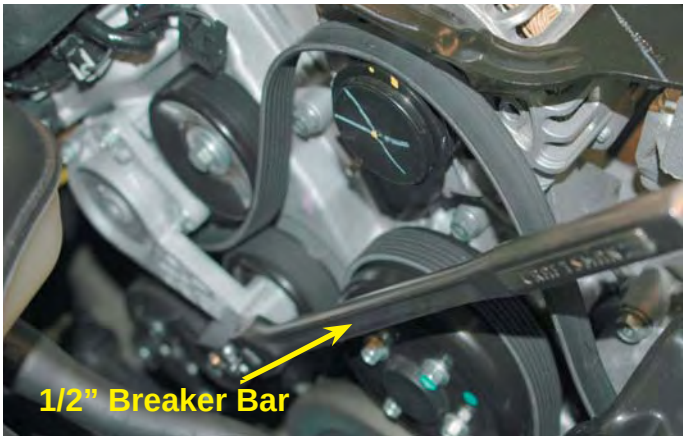


23. Carefully lift the intake manifold free from the engine.

24. Carefully clean the cylinder head port faces and cover them with masking tape or clean shop towels.

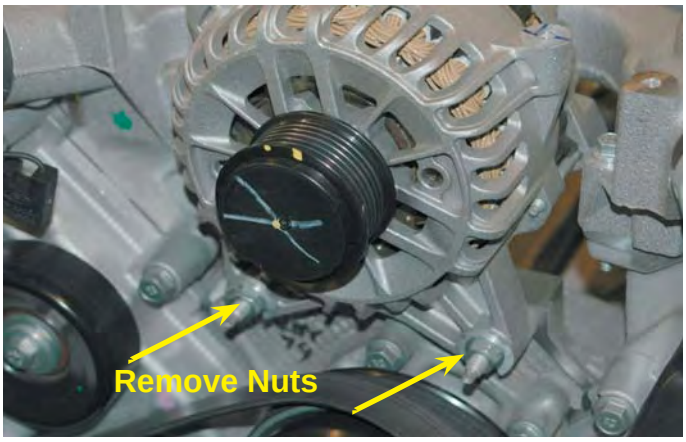


25. Depress the tensioner arm by inserting the square end of a 1/2” breaker bar into the square hole on the arm. Press the bar down to relieve tension on the belt and remove the belt from the pulleys. This belt will no longer be used.



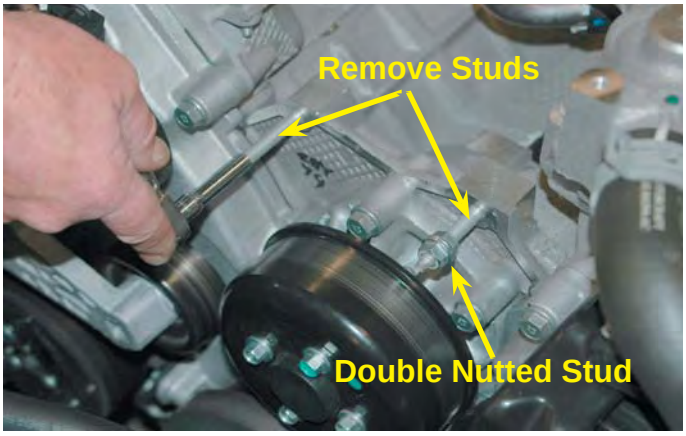
26. Remove the Alternator bracket and the (4) bolts that secure it in place using a 10mm socket wrench

27. Remove the (2) nuts that secure the alternator using a 13mm wrench.



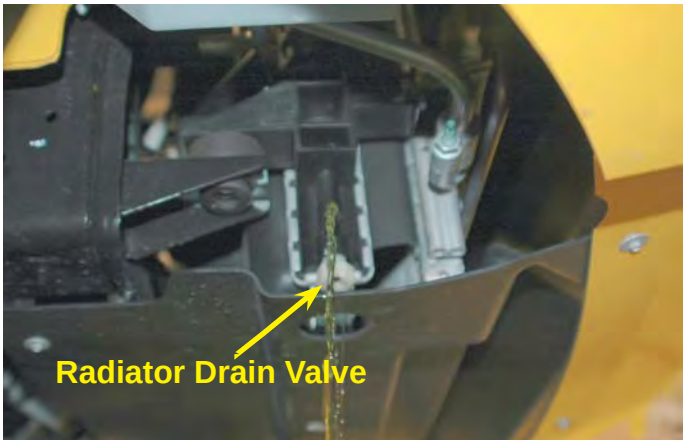
28. Lift the alternator up off its mounting studs and carefully place it on the passenger side fender well. Protect the fender wall using a thick shop towel or fender cover.

29. Remove the (2) alternator-mounting studs by placing a 6mm socket wrench on the hex ends of the studs or “double-nutting” them and unscrewing them from the engine block.

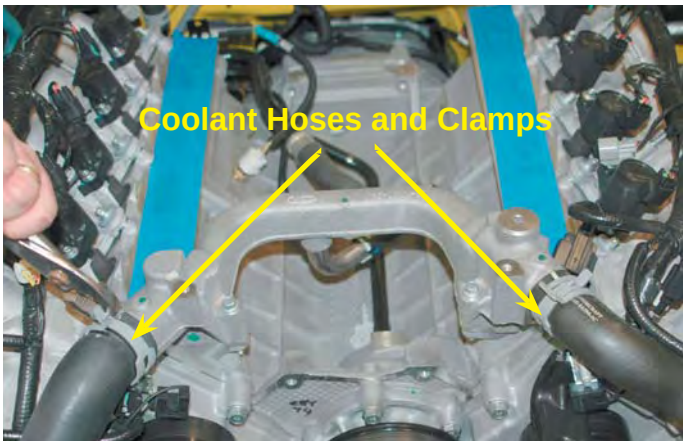


30. The following steps are for Intercooled vehicles only! Non-intercooled vehicles please skip to step 58.

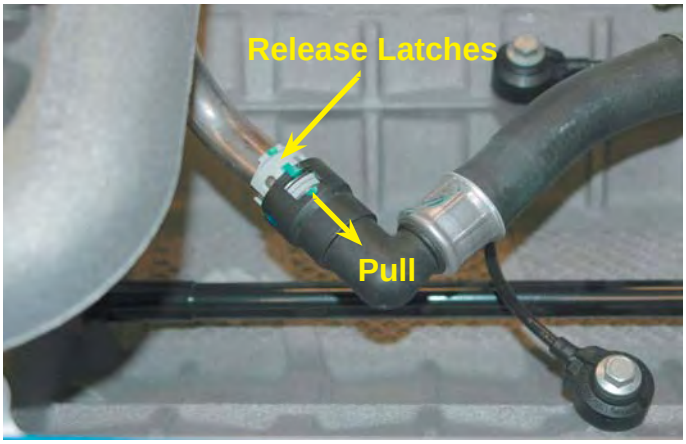
On the passenger side of the vehicle, under the nose, locate the white plastic radiator drain valve. Open the valve and collect the coolant in a drain pan for re-use late in the installation.



31. Remove the coolant hoses from the coolant manifold. Use a pair of pliers to squeeze the clamps that secure them. Pull both hoses free from the coolant manifold. Also remove the passenger side coolant hose from where it meets the radiator and set this hose aside for future modifications.

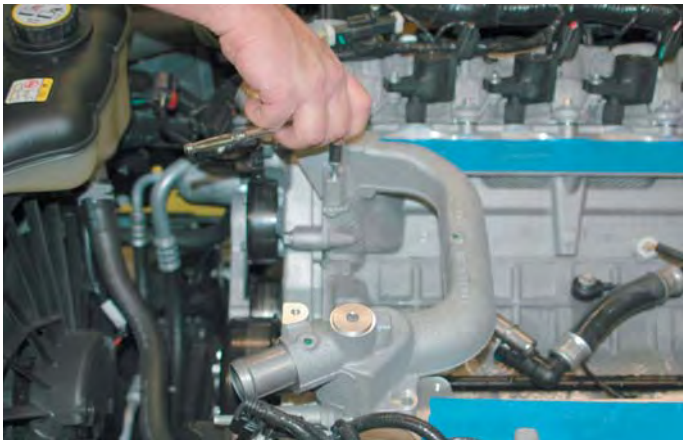


32. On the bottom of the coolant manifold, in the engine valley, locate the heater hose connector. Squeeze the (2) gray release latches and pull the connector free from the steel “elbow”.

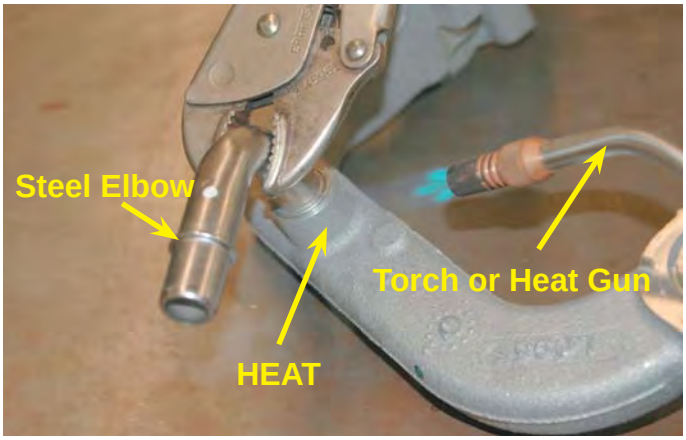


33. Remove the gray release latches from the elbow and insert them into the connector.

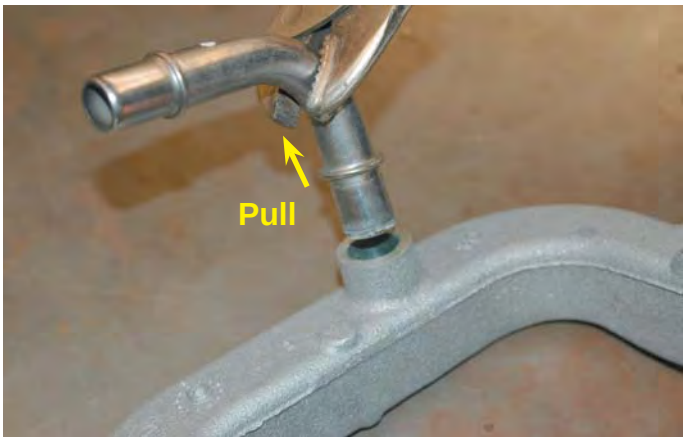
34. Remove the coolant manifold and the (4) bolts that secure it using a 10mm socket wrench.



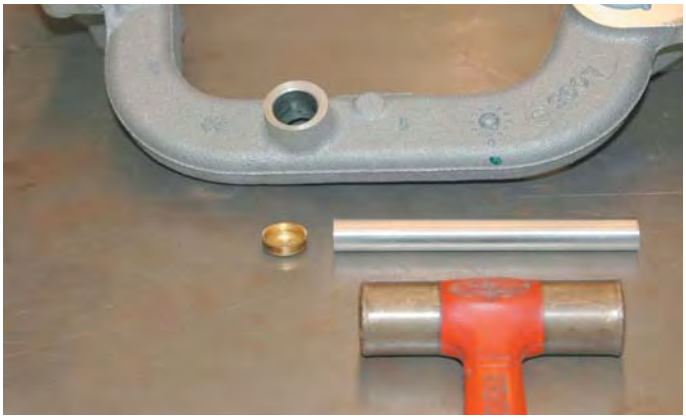
35. Grasp the steel elbow on the bottom of the coolant manifold using a large set of pliers. Using a small torch or heat gun, apply heat to the bottom of the manifold were the steel elbow is inserted.



36. Pull the elbow free from the manifold, but do not twist it, as this will damage the aluminum manifold.



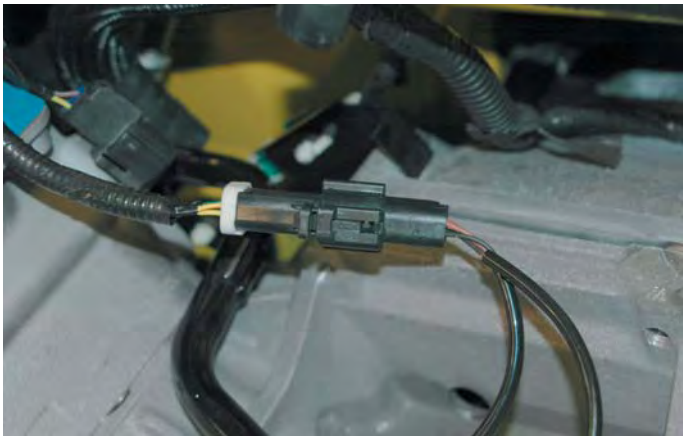
37. Allow the manifold to cool completely. Install the small 5/8” core plug supplied using a suitable drift and hammer in to the hole that the elbow was removed from.



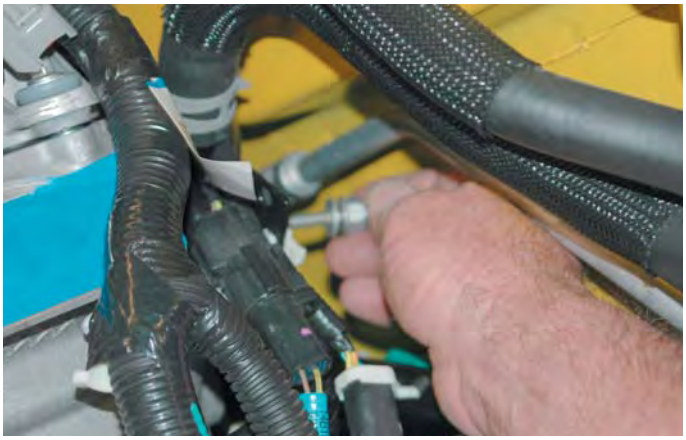
38. Here is the core plug correctly installed in the bottom of the coolant manifold.

39. Locate the Engine Coolant Temperature (ECT) connector clipped to the steel coolant pipes in the engine valley. Disconnect it by squeezing the release trigger of the connector and pulling it apart.

40. Locate the Engine Knock Sensor (EKS) connector clipped to the steel coolant pipes. Disconnect it by squeezing the release trigger of the connector and pulling it apart.

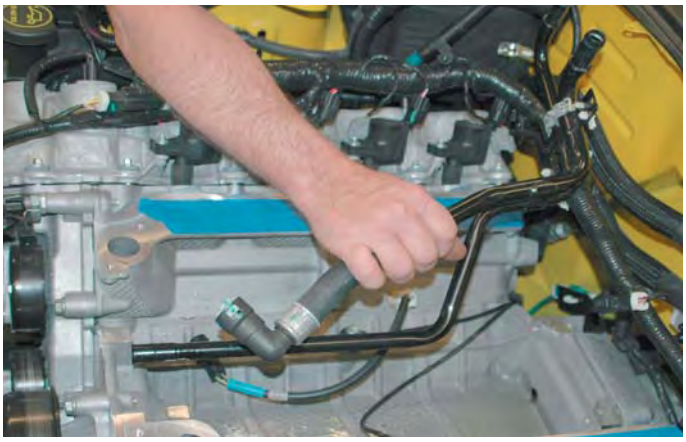


41. At the rear of the passenger side cylinder head, locate the bolt that secure the steel coolant pipes in place and remove it using a 13mm socket wrench.

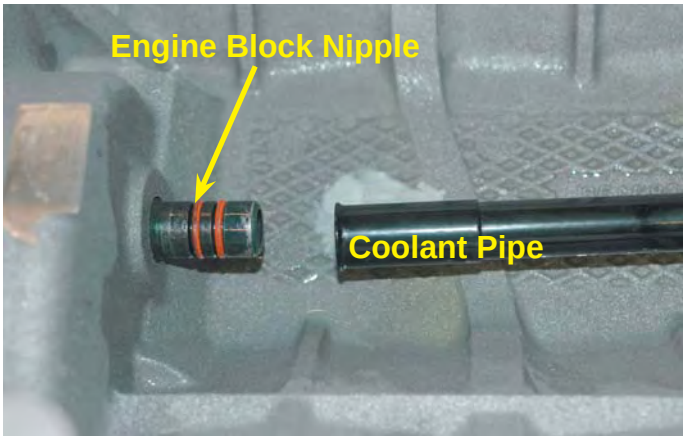


42. Pull the coolant pipes up so you can remove the coolant hoses and clamps using a pair of pliers.

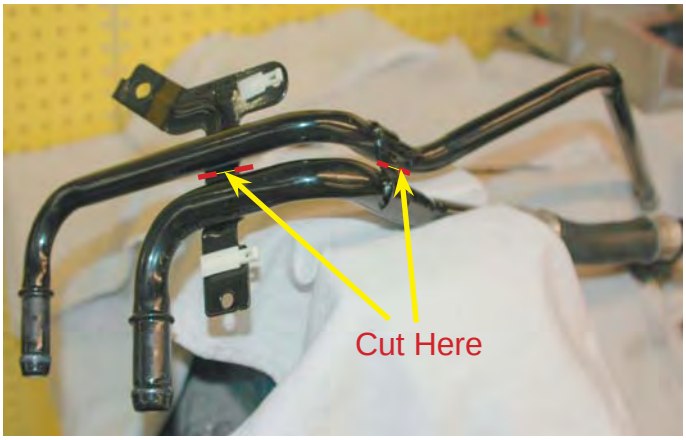
43. After removing the coolant hoses, gently lift the pipes up and back to remove them from the engine. Some additional engine coolant will be lost at this point, place a suitable drain pan under the transmission bellhousing to collect it.



44. When removing the steel coolant pipes from the engine, take care not to damage the smaller of the (2) pipes and the nipple where it connects to the engine block. The coolant pipe is a “slip-fit” on this nipple.



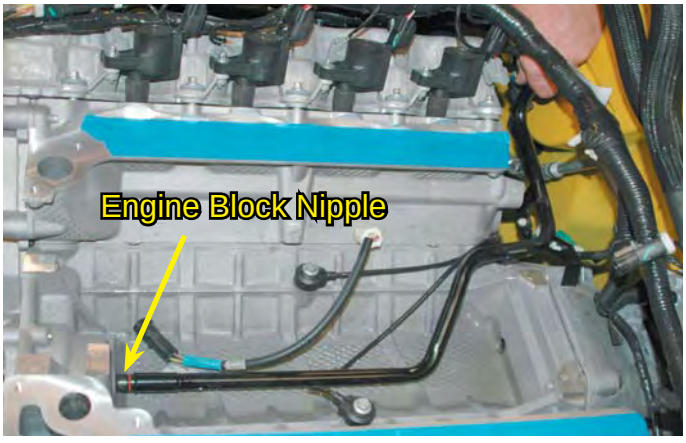
45. Place the coolant pipes in the soft jaws of a vice. Separate the (2) coolant pipes by cutting the connecting brackets using a hack saw.



46. Use care when cutting, as the smaller diameter pipe will be re-used.

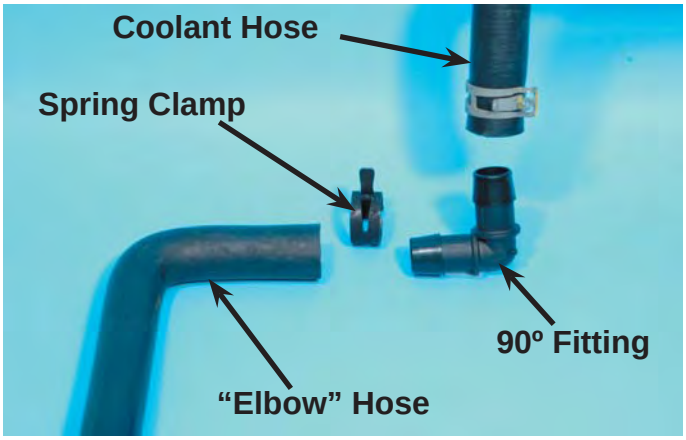
47. Here are the coolant pipes separated, and the smaller diameter pipe is now ready for re-installation.

48. Re-install the smaller diameter coolant pipe by first carefully starting the end on the engine block nipple. Secure the coolant pipe with the bolt previously removed. Re-connect the ECT and EKS sensor connectors. Using some of the ty-straps supplied, secure the connectors to the coolant pipe and the remaining portion of the connecting bracket.



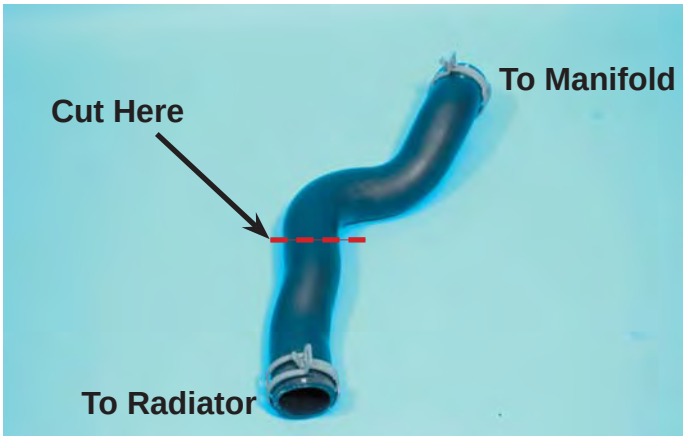
49. Re-install the coolant hose onto the pipe using the original clamp.

50. On to the remaining coolant hose, install the 90-degree connector and the “elbow” hose supplied as shown. Secure the 90-degree fitting with the original clamp, and the elbow hose with the new spring clamp supplied.



51. Here is the 90-degree fitting and elbow hose installed. Route the long straight section of the elbow hose forward along the side of the engine to be connected in a later step.

52. Locate the passenger side coolant hose removed previously. Note: Which end goes to the manifold and to the radiator. Just below the “dog leg” bend in the middle of the hose, locate the short, straight section and cut the hose in the middle of this section.



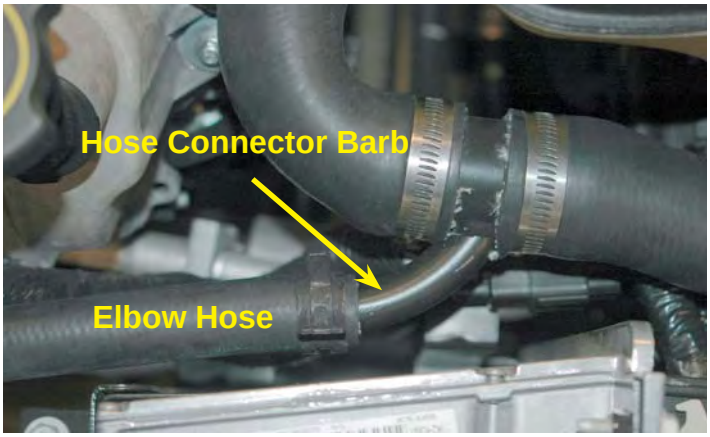
53. Install the hose connector supplied into the ends of the hose. Note that the barb on the connector will point rearwards, towards the engine, away from the radiator. Secure the connector in the hose with the #18 clamps supplied but leave them loose so final adjustments can be done on the vehicle.

54. Here is the completed hose with the connector installed.

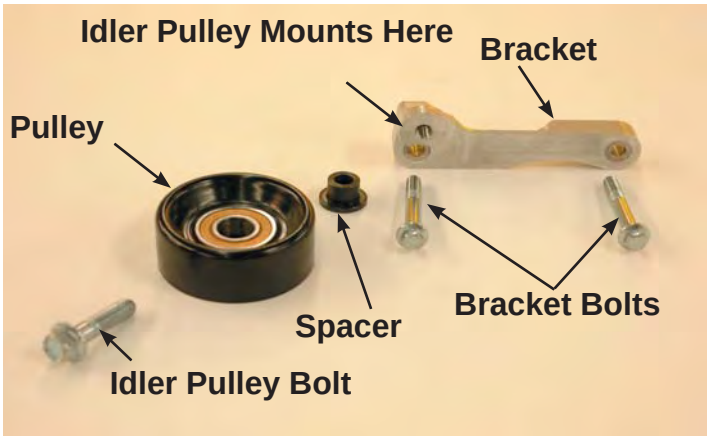
55. Re-install the water manifold. Torque the fasteners to 89 in-lbs using a 10mm socket and torque wrench.

56. Re-install both coolant hoses. Note, on the passenger side hose, that the barb on the connector will point rearwards towards the engine, away from the radiator. Secure the connector clamps after the final adjustments.

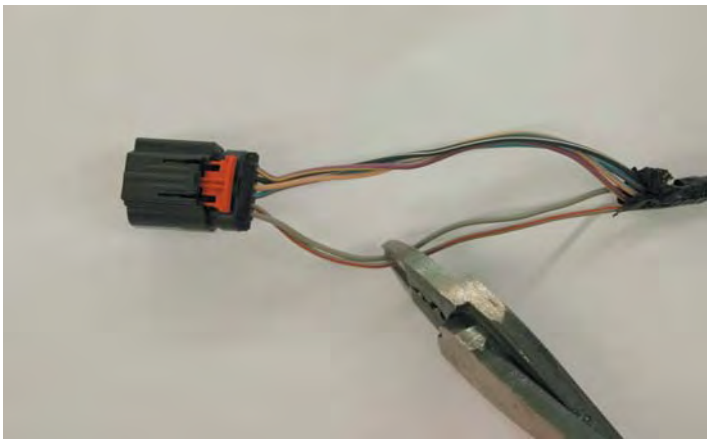
57. Install the end of the elbow hose on to the barb of the new coolant hose connector with the spring clamp supplied. Position the connector and elbow hose so that the elbow hose can be routed beside the engine. Tighten the connector hose clamps. Refill the radiator reservoir with the coolant removed earlier.



58. Here is the new drive belt idler pulley and mounting hardware.



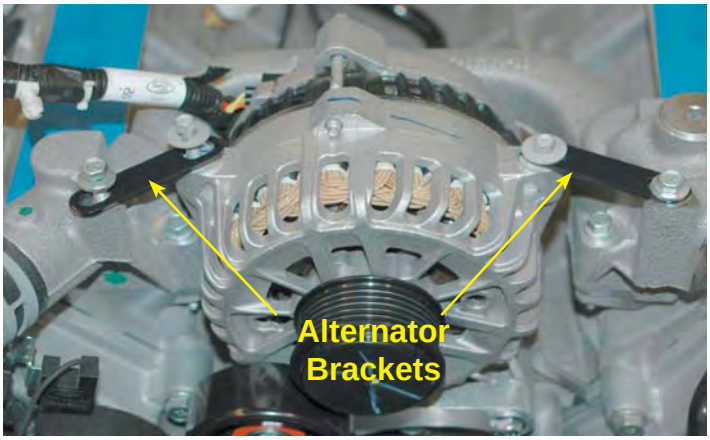
59. Install the new bolts through the bracket and into the holes that originally mounted the alternator. Note, the gap between the bracket and the block, this is where the alternator will mount.



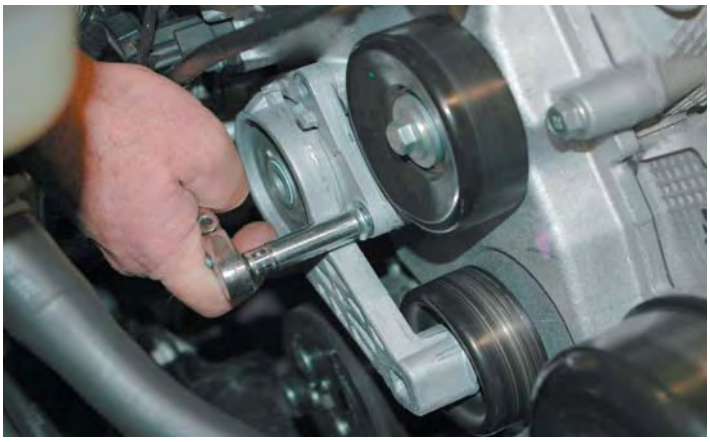
60. Install the alternator and torque the (2) mounting bolts to 22 ft-lbs (30 Nm) using a 12mm socket and torque wrench.

61. Install the idler pulley with its spacer into the remaining hole on the mounting bracket with the bolt supplied. Torque this bolt to 28 ft-lbs (38 Nm) using a 15mm socket and torque wrench.

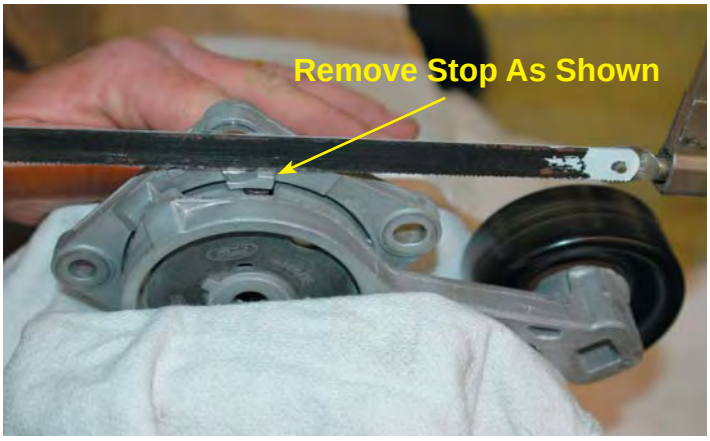
62. Install the (2) new alternator brackets with the (4) original bolts. Torque them to 106 in-lbs (12Nm) using a 8mm and 10mm sockets and a torque wrench.



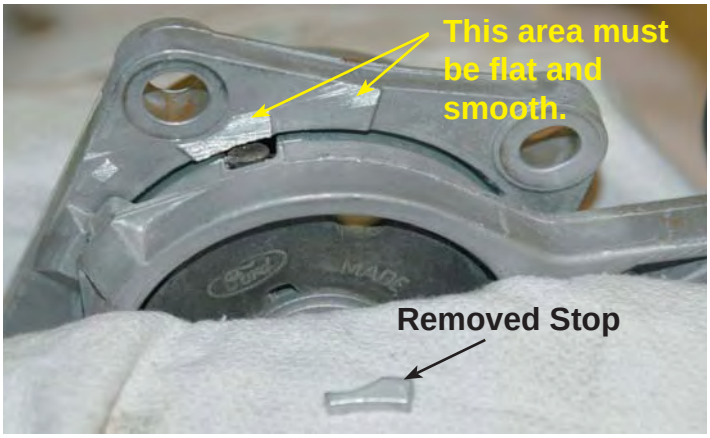
63. Remove the (3) bolts that secure the belt tensioner using a 10mm socket wrench and remove the tensioner from the front of the motor.



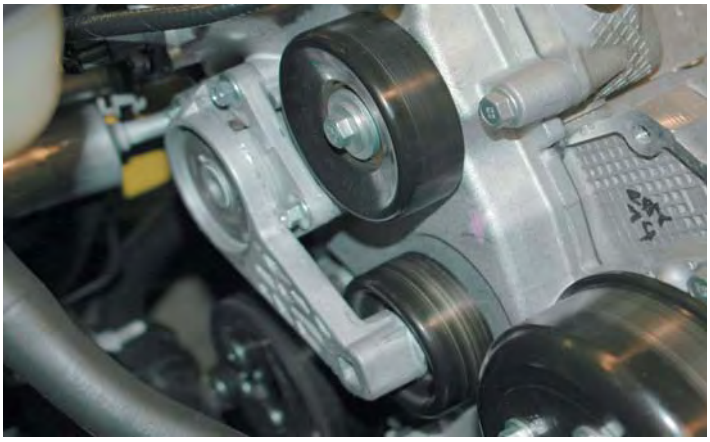
64. Carefully place the tensioner in the soft jaws of a vice. Using a hacksaw or a small grinder, remove the center stop of the tensioner.



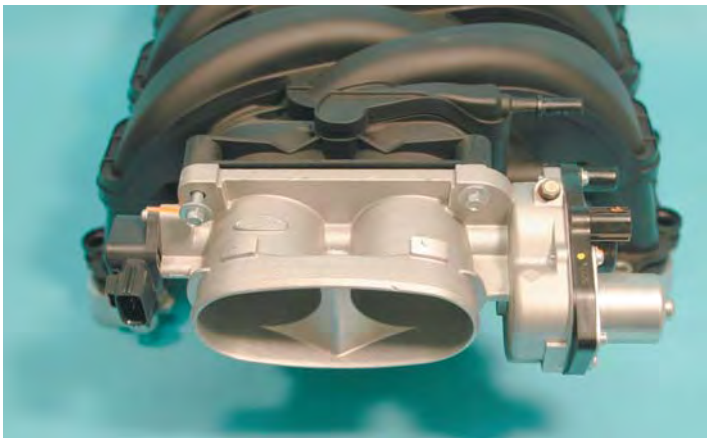
65. Here is the tensioner with the stop removed. Ensure that there is no material left on the body of the tensioner where the stop previously was. Grind or file the body to make this area smooth and flat with the surrounding area of the body.



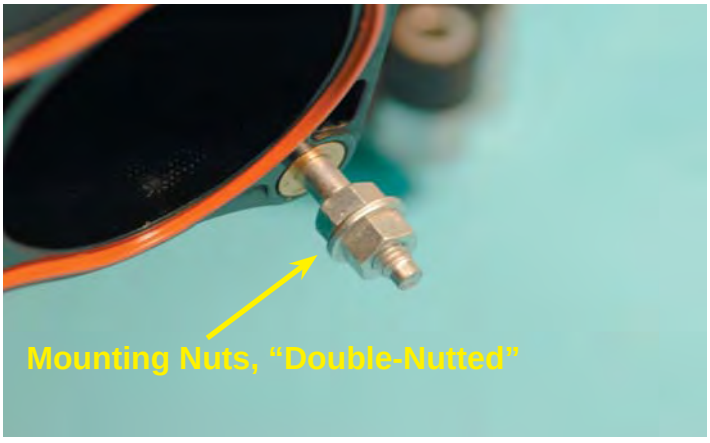
66. Re-install the modified tensioner into it original location with its bolts. Torque the (3) bolts to 22 ft-lbs (30 Nm) using a 10mm socket and torque wrench.



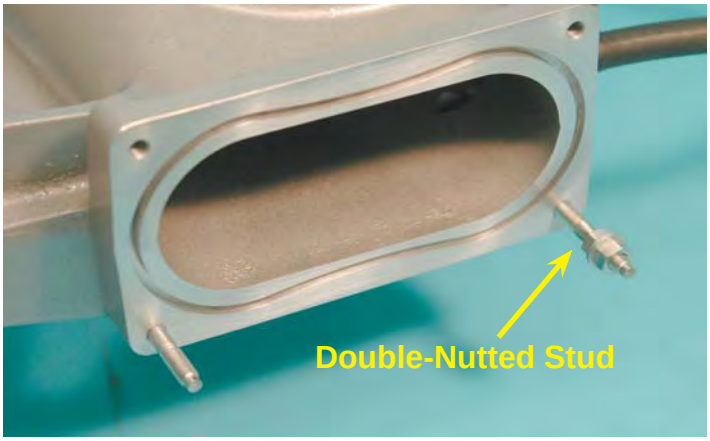
67. Remove the throttle body from the intake manifold by removing the (2) bolts at the top using a 8mm wrench. Remove the nuts at the bottom of the throttle body using a 10mm wrench.



68. With the (2) nuts removed in the last step, tighten them against each other "double-nutting" them on each stud. Remove the (2) studs from the intake manifold this way.

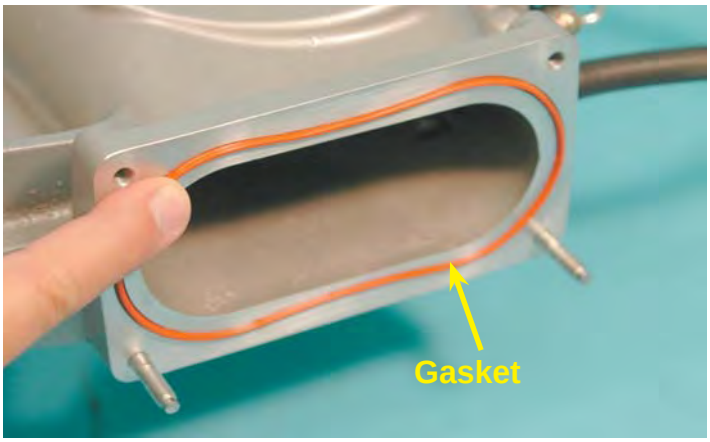


69. Install the two-throttle body-mounting studs removed in the previous step into the lower (2) holes on the supercharger inlet flange. Double-nut the studs, tighten them securely into the supercharger inlet flange and remove the nuts.

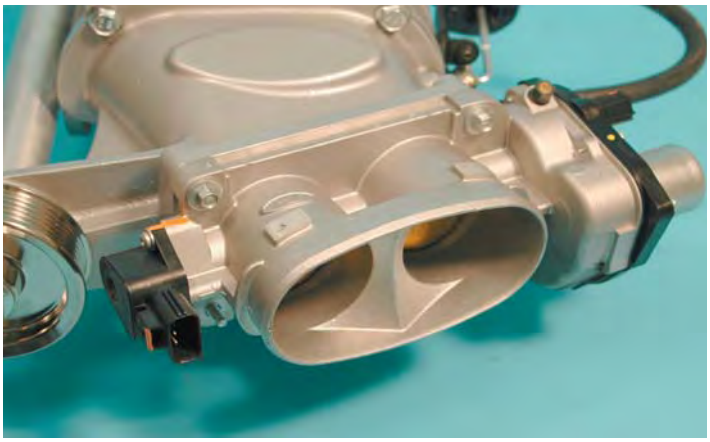


70. Carefully remove the throttle body gasket from the intake manifold.

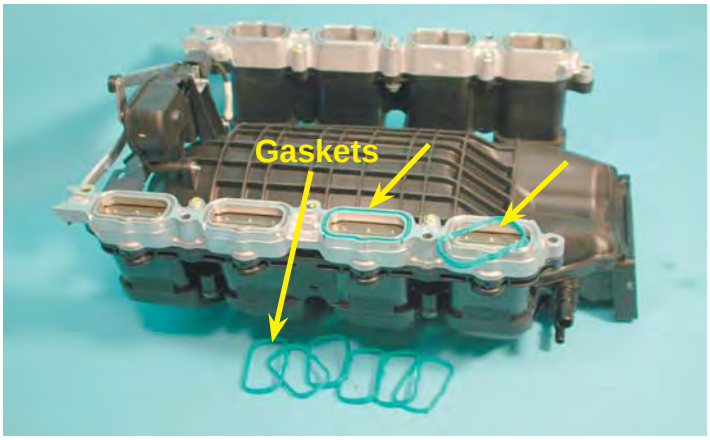
71. Install the throttle body gasket into the groove in the inlet manifold flange.



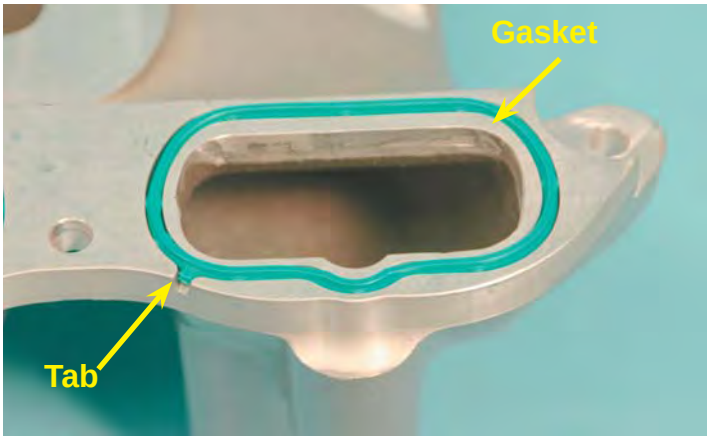
72. Install the throttle body onto the inlet manifold with the TPS on the passenger (right) side using the original bolts. Tighten the (2) bolts and (2) nuts using 8 &10mm sockets and torque them to 106 in-lbs (12Nm).



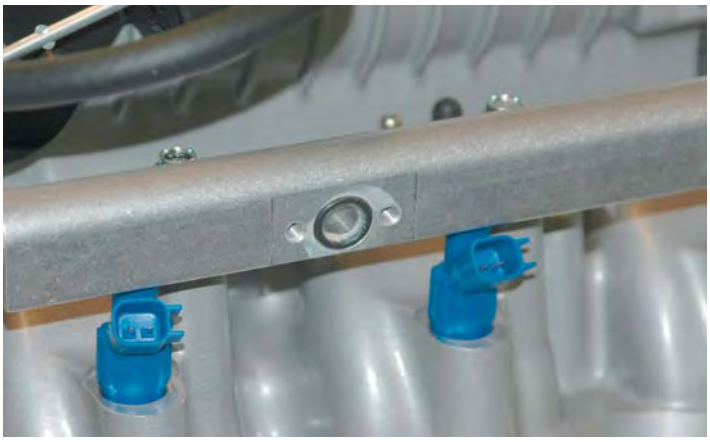
73. Carefully remove the (8) intake manifold gaskets from around the port openings on the bottom of the intake manifold.



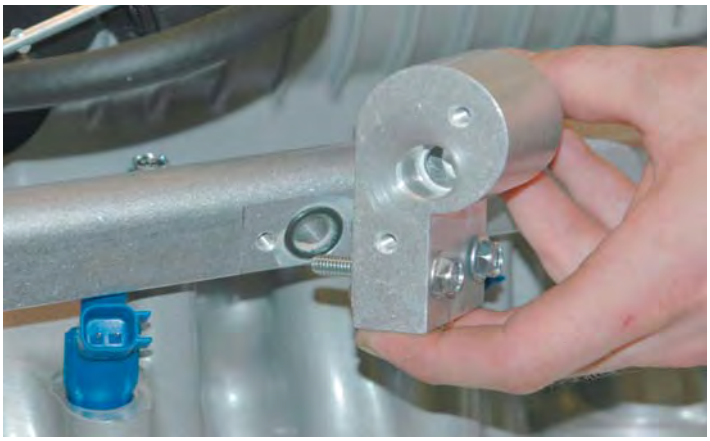
74. Clean and inspect the manifold gaskets removed from the original intake manifold. Install the gaskets onto the supercharger manifold. Note, the “tab” on the gasket and how it fits in the slot provided for it. Ensure that all (8) gaskets are installed correctly



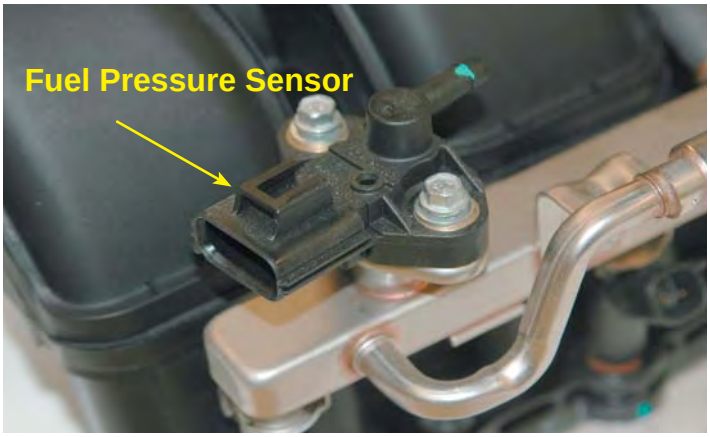
75. Using a small amount of the grease supplied, lubricate the fuel manifold O-ring and install it into the recess on the driver side fuel rail.



76. Install the fuel manifold on to the driver side fuel rail using supplied O-ring and bolts. Torque the fuel manifold bolts to 106 in-lbs (12Nm) using a torque wrench and 10mm socket. Be careful not to pinch the O-ring.

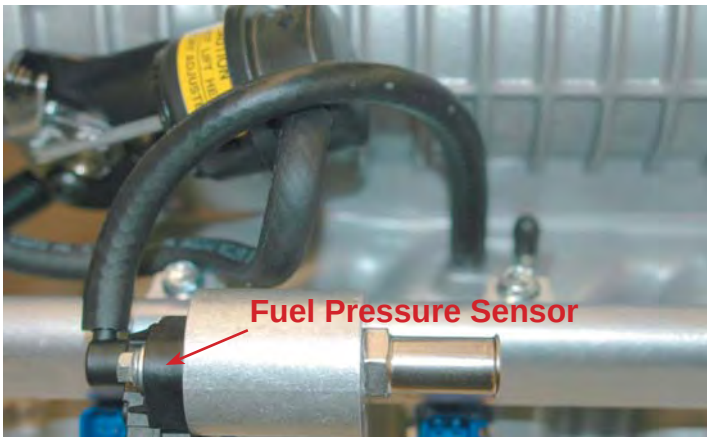


77. Remove the FPS from the fuel rail by removing the (2) mounting bolts using a 8mm socket wrench.



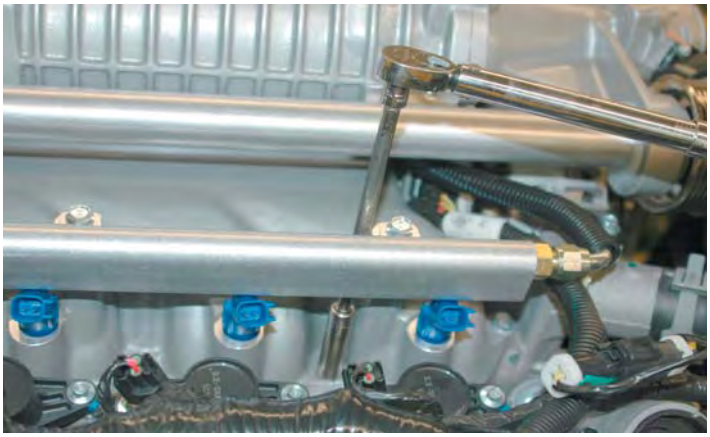
78. Carefully install the FPS onto the fuel manifold using a small amount of the grease supplied on the sensor O-ring. Fasten the sensor using the (2) original mounting bolts. Torque the bolts using a torque wrench and a 8mm socket to 106 in-lbs (12Nm).

79. Connect (1) end of the 6” length of 1/4” hose supplied to the small barb located behind the bypass canister on the supercharger manifold. Connect the remaining end of the hose to the FPS barb located on the fuel rail as shown.

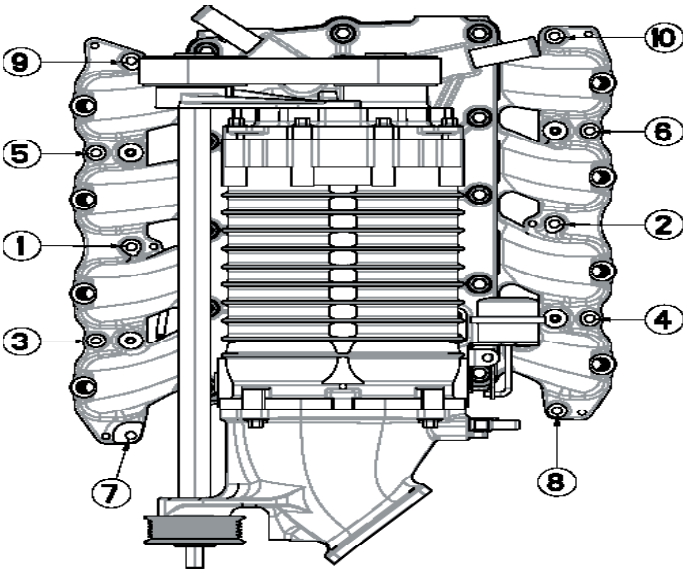


80. Remove the tape or shop towels placed over the port faces. With the help of an assistant carefully set the supercharger and manifold assembly in place. Do not use the black plastic bypass canister as a lifting point. This is pre-set from the factory and can be damaged if you lift with it.

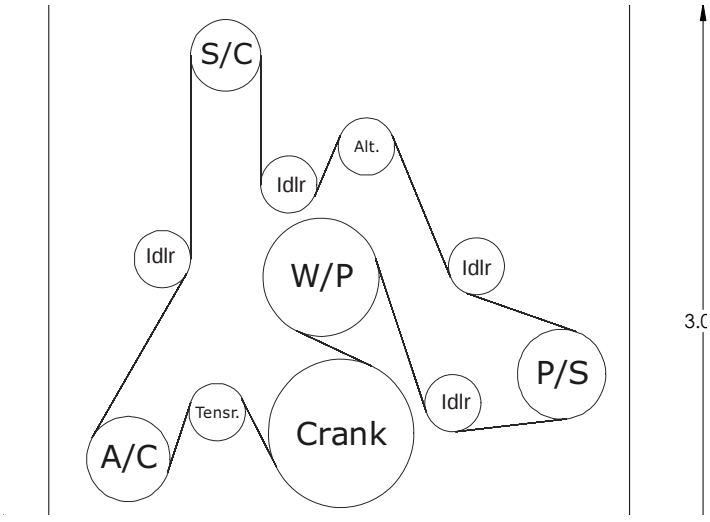
81. Install the 10 intake manifold bolts into place on the supercharger manifold. Torque all manifold fasteners in (2) steps using a 10mm socket and torque wrench using the diagram shown in the next step.



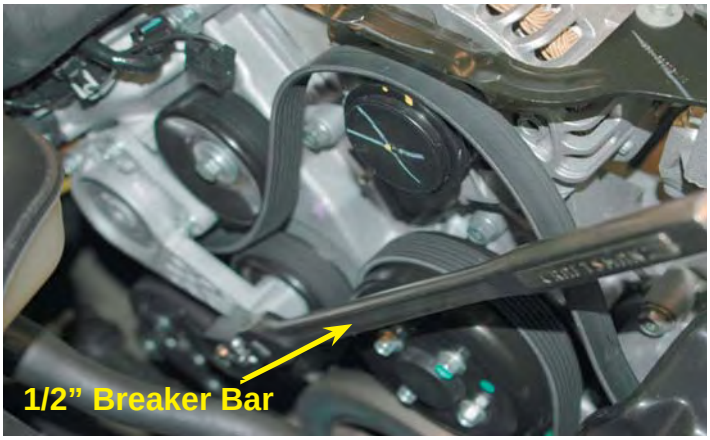
82. Torque all manifold fasteners in (2) steps. In the first step torque the fasteners to 18 in-lbs (2Nm). In the second step torque to 89 in-lbs (10Nm) using the diagram shown.



83. Here is the new drive belt routing diagram.

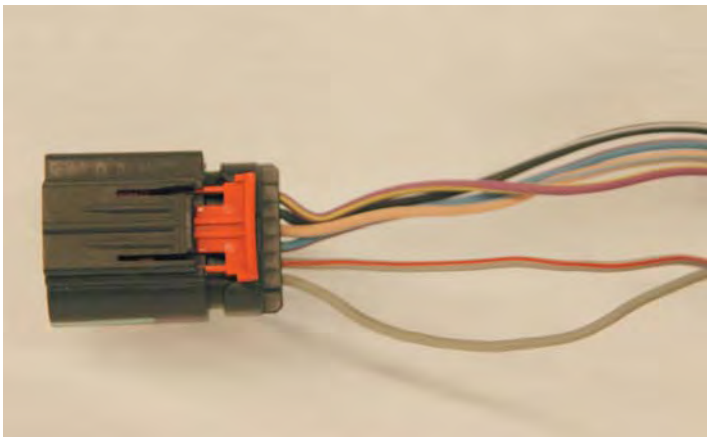


84. Using a “breaker bar” or long 1/2” ratchet wrench, relieve the tension on the tensioner arm and install the new drive belt using the belt diagram provided.

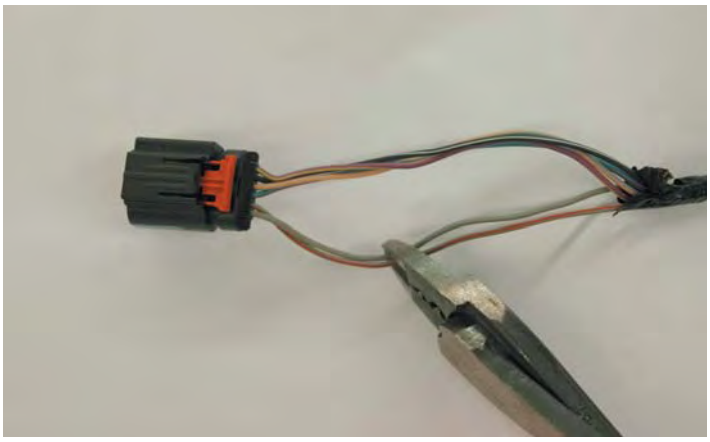


85. Locate the Mass Air Flow (MAF) connector on the wiring harness. Remove the tape from tape form the harness back to the main branch.

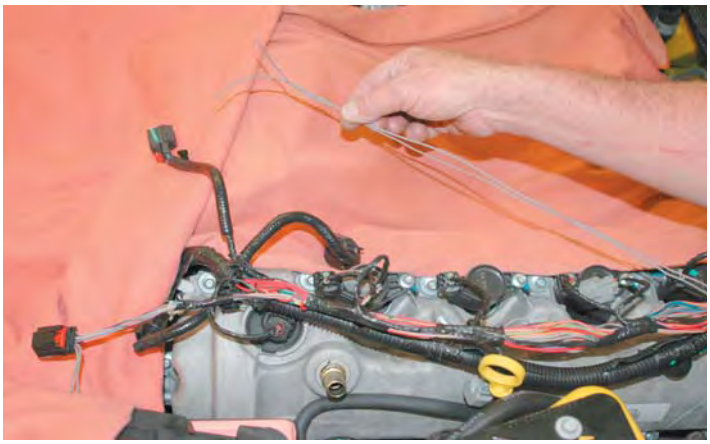
86. On the MAF connector, locate the SOLID GRAY wire and the GRAY/RED wire. This is the Intake Air Temp (IAT) circuit.



87. Approximately (2) inches behind the connector cut only the SOLID GRAY and the GRAY/RED wires.

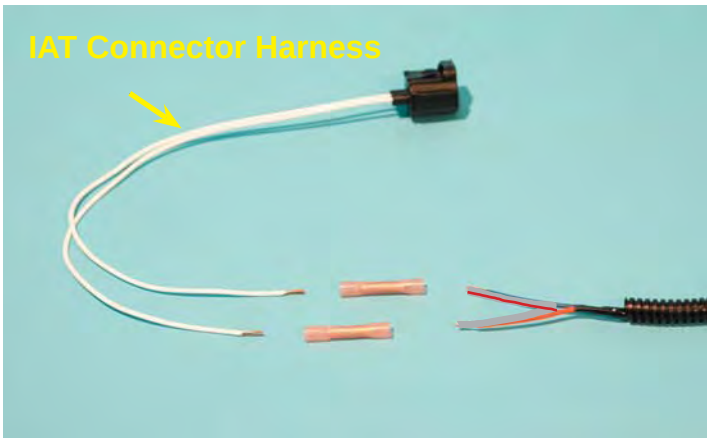


88. Remove the tape on the main branch of the wiring harness behind the MAF connector backs to about the #6 fuel injector branch. Locate the SOLID GRAY and the GRAY/RED wires previously cut from the MAF connector and pull them free from the harness to this point. You will be making a new branch on the wiring harness with these wires.



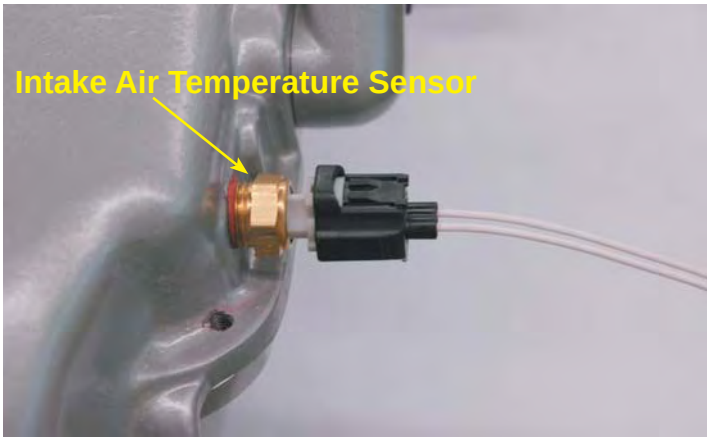
89. Tape the (2) short ends of the Gray and Gray/Red wire at the MAF connector to the harness as they will no longer be used. Recover the harness with tape leaving the SOLID GRAY and the GRAY/RED wire exposed.

90. Install the new IAT connector harness onto the Grey and the Gray/Red wires using the crimp/shrink connectors supplied. Either white wire can be connected to the solid Grey and the Gray/Red wire.

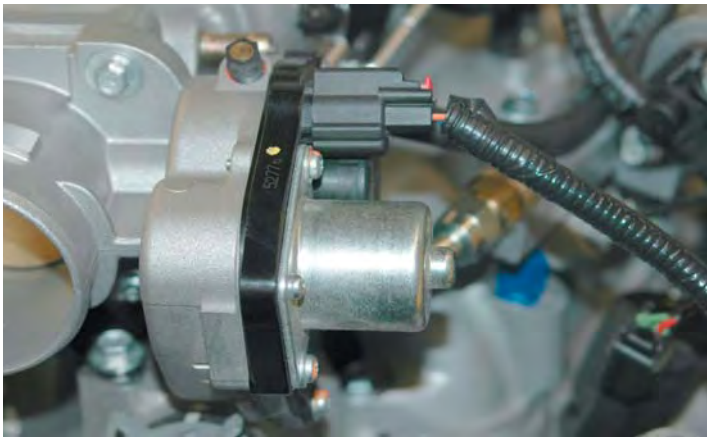


91. Install the crimp/shrink connectors by stripping a 1/4” of insulation off each end of the wires. Insert (1) end of the wire into the crimp shrink connector and crimp it securely. Using a heat gun or blow dryer set on high, shrink the plastic covering of the connector until the plastic covering completely around the wire. Crimping the connector alone is not enough to ensure a permanent connection; you must shrink the plastic covering! When you are finished cover the wires and connectors with the piece of split loom supplied.

92. Install the new IAT sensor connector onto the IAT sensor located at the rear of the supercharger manifold.

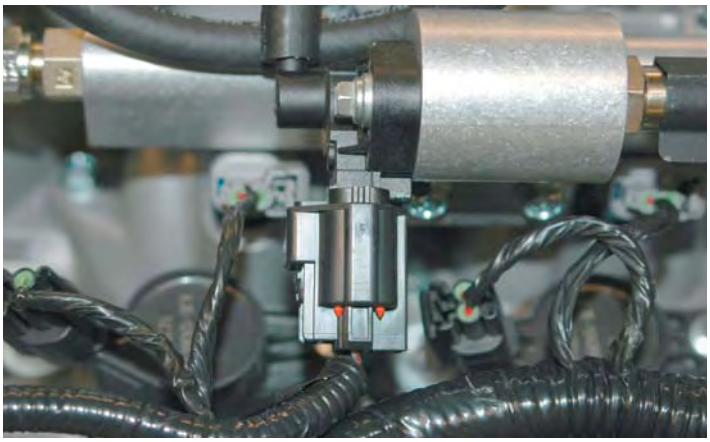


93. Install the ETC connector onto the throttle body.



94. Install the TPS connector onto the throttle body.

95. Install the fuel pressure connector to the sensor on the fuel rail.

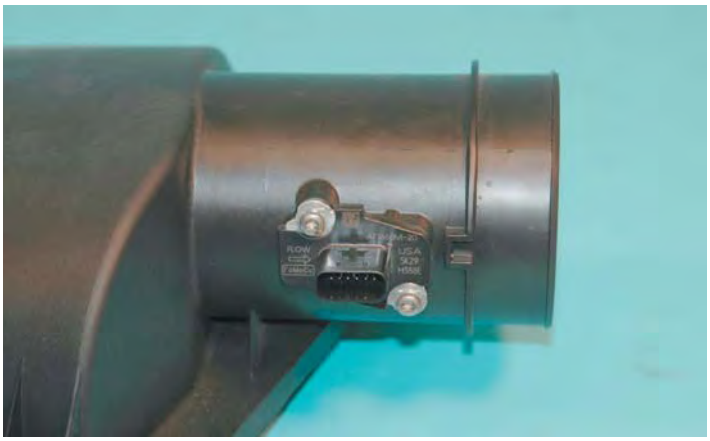


96. Install all eight-fuel injector connectors onto the injectors.

97. Remove the air box cover by pulling the latches rearward and lifting up on the cover. Remove the air filter element. Note: A replacement element is supplied.

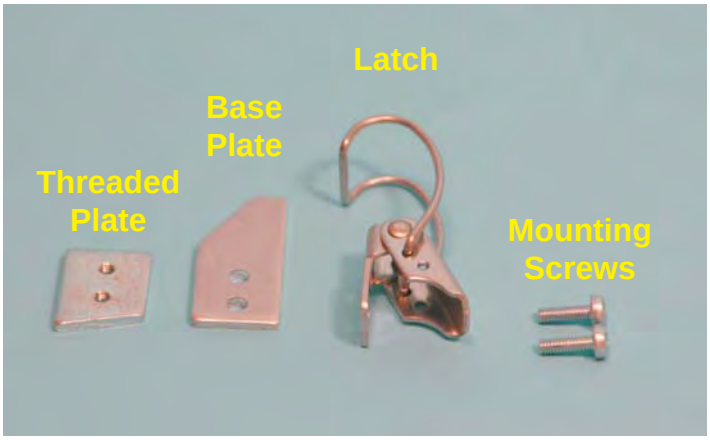
98. Remove the air box from the vehicle by removing the mounting bolt using a 10mm socket wrench.

99. Carefully remove the MAF element from the air box cover by removing the (2) screws using a T-20 Torque driver.

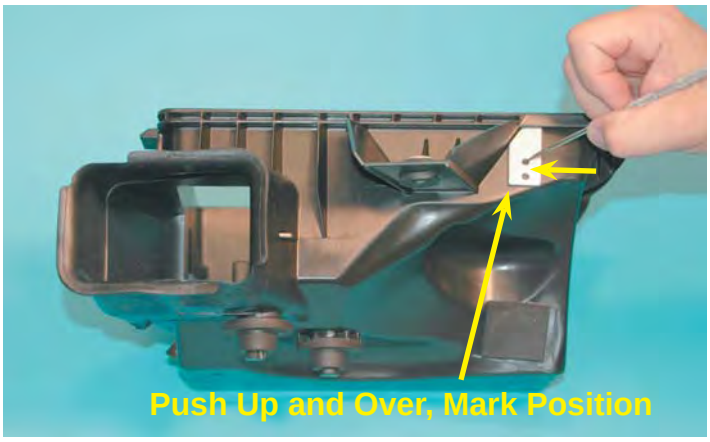


100. Assemble the MAF element into the new air box cover with the original screws. Note the direction of the “FLOW” as shown on the MAF element-mounting flange, this should point towards the round opening of the new air box cover.

101. Here are the new air box cover latch components. There are components for (3) latch assemblies.

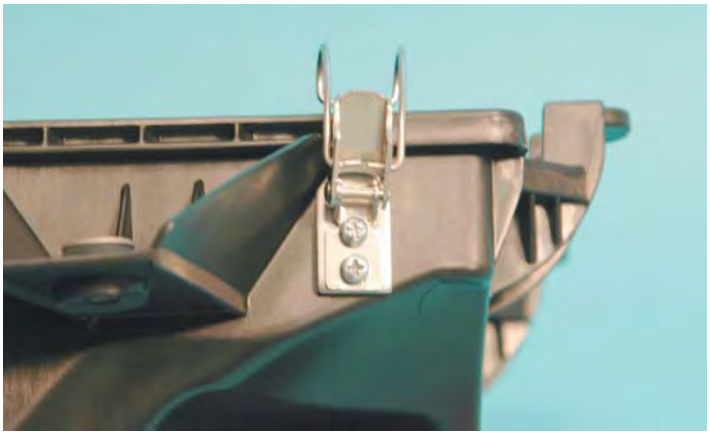


102. Install the air box cover latches by sliding the base plate into place on the left (inlet) side of the air box. Push the base plate up under the upper edge of the box and against the side of the air box mount. Note how the left side of the base plate matches the contour of the air box. Use a scribe or a pen to mark the location of the holes in the base plate on the side of the air box.



103. Use a 3/16” drill to make holes in the locations you marked.

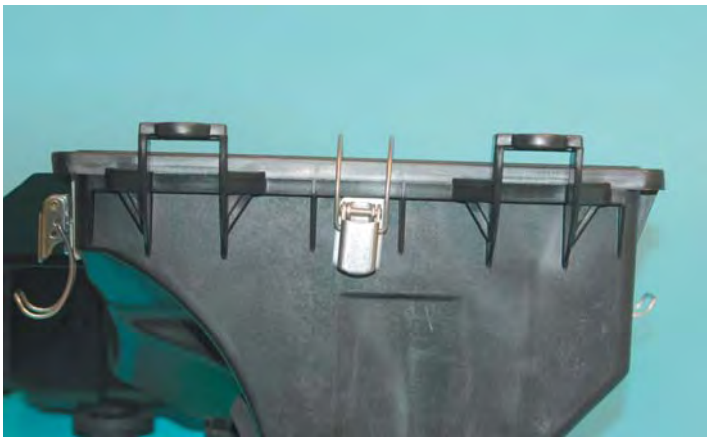
104. Install the latch into place by passing the mounting screws through the latch, base plate and into air box



105. Install the threaded plate by threading the mounting screws into it. Tighten the screws securely. Note how the bottom edge of the threaded plate matches the contour of the air box.

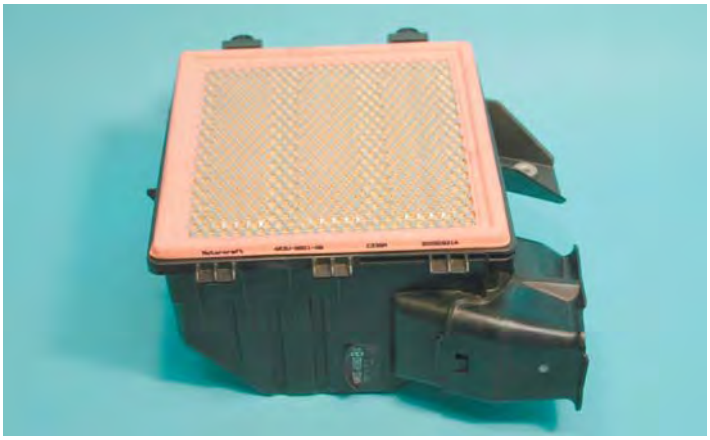
106. Here is latch installed on the left side of the air box.

107. Install another latch using the described method on the rear of the air box as shown. Ensure that the base plate is pushed up under the upper edge of the air box.



108. Finally install the last latch on the right side of the air box in the location shown.

109. Re-install the air filter element into the air box.

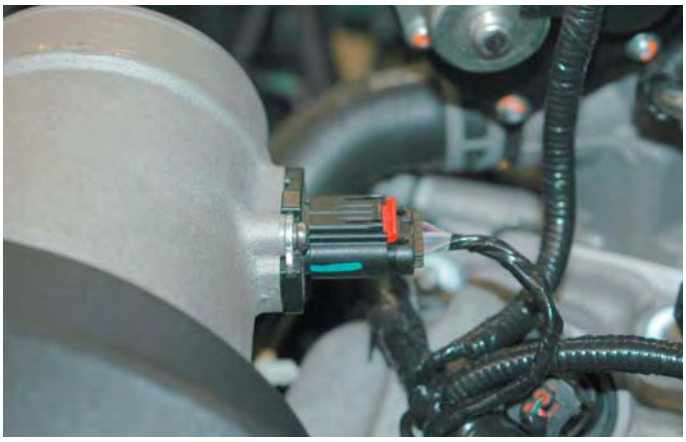


110. Install the new air box cover by engaging the (3) locating tabs on the rear of the air box.

111. Position the air box cover in place as shown and secure it by snapping the (3) latches down.

112. Re-install the modified air box assembly into its original location. Tighten the mounting bolt securely using a 10mm socket wrench.

113. Install the MAF connector onto the MAF sensor.

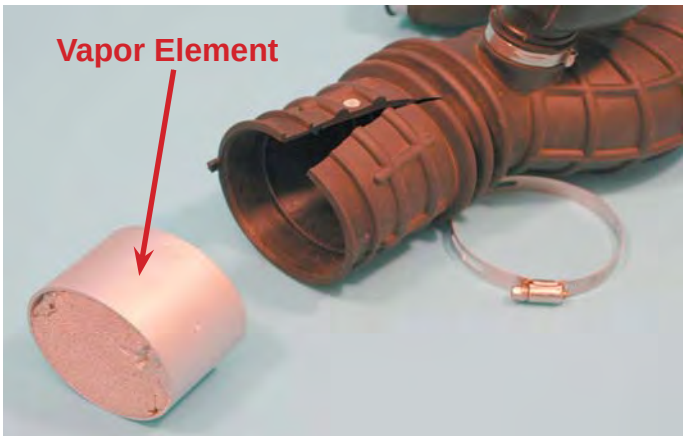


114. Here is the air tube assembly and mounting components.

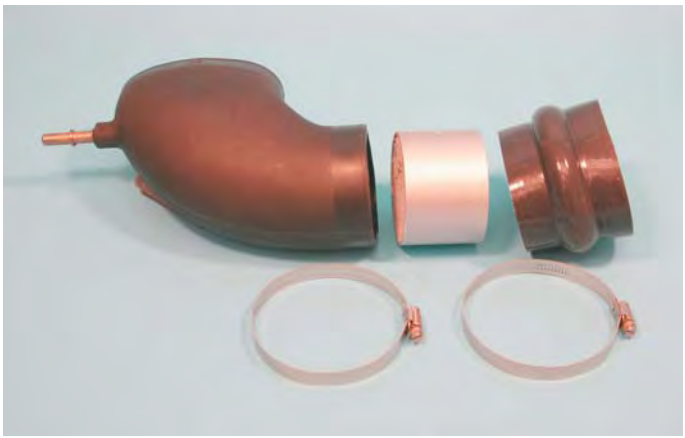
115. Locate the original air tube assembly. Inspect and squeeze the smaller, round (MAF) end to see if there is a vapor element installed. If your vehicle has a vapor element it must be installed in the supercharger system or SERIOUS ENGINE DAMAGE WILL RESULT! If no element is present please skip to step 119.

116. Remove the clamp from the end of the air tube. Use a sharp knife or razor blade to cut the rubber of the air tube to free the vapor element.

117. Carefully remove the vapor element from the air tube.



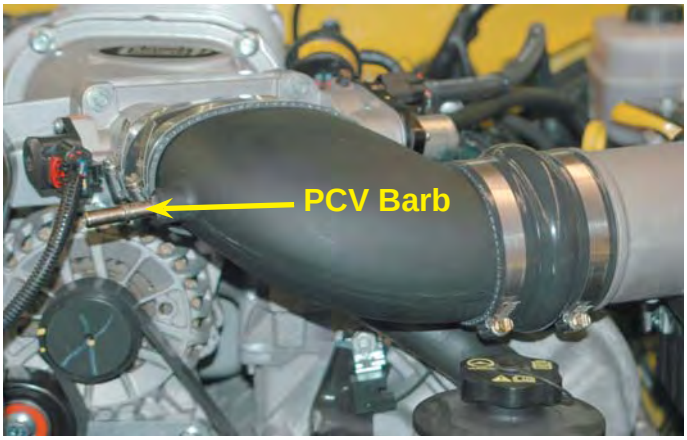
118. Install the vapor element into the end of the new air tube as far as it will go. Next, slide the new “hump” hose over the element and onto the air tube.



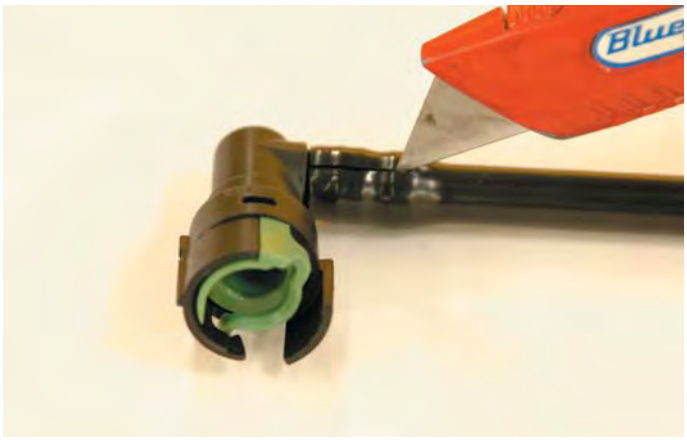
119. Install the hose and clamps onto the air tube as shown. Do not tighten the clamps completely at this time.

120. Install the air tube assembly by sliding the round hose onto the air box cover connection first, then working the oval hose onto the throttle body.

121. With the air tube assembly installed, carefully tighten all (4) hose clamps. Note: The PCV barb.

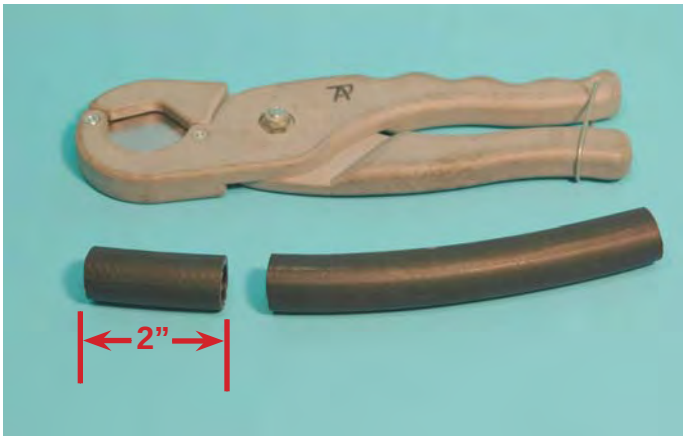


122. Using a shop knife cut the plastic tubing on the original PCV lines to free the plastic end fittings.



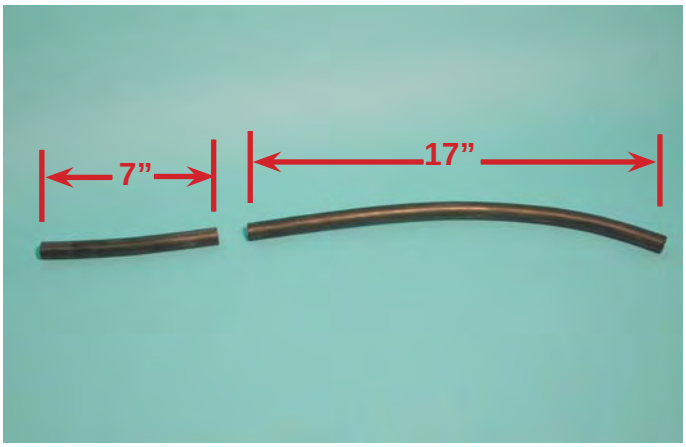
123. Remove the brake vacuum hose where it meets the check valve on the brake booster. This hose, the “T” fitting and small hose connected to it will no longer be used.

124. Cut a 2” length of 3/4” vapor line from the length of hose supplied.

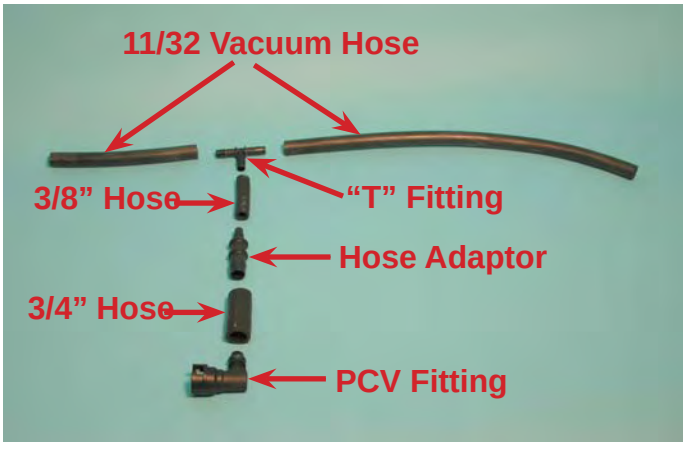


125. Cut a 2-1/2” length of 3/8” fuel line from the length of hose supplied.

126. Cut the length of 11/32” vacuum hose supplied into (2) pieces, (1) 7” long and the other hose 17” long.



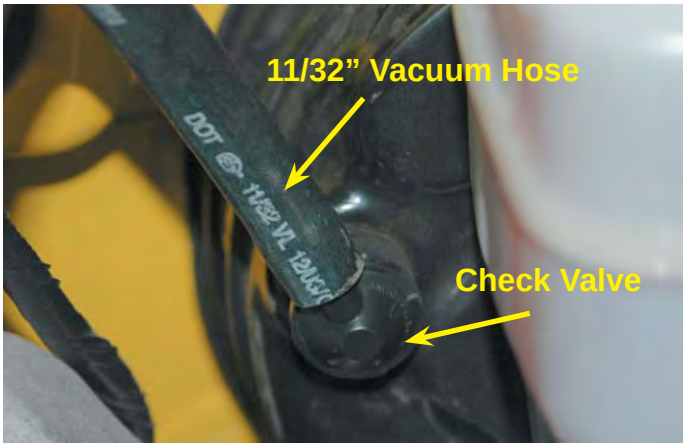
127. Here are the components that will make up the driver side PCV/brake hose assembly. Note: The 3/8” “T” fitting and the 3/4” to 3/8” adaptor fittings are supplied.



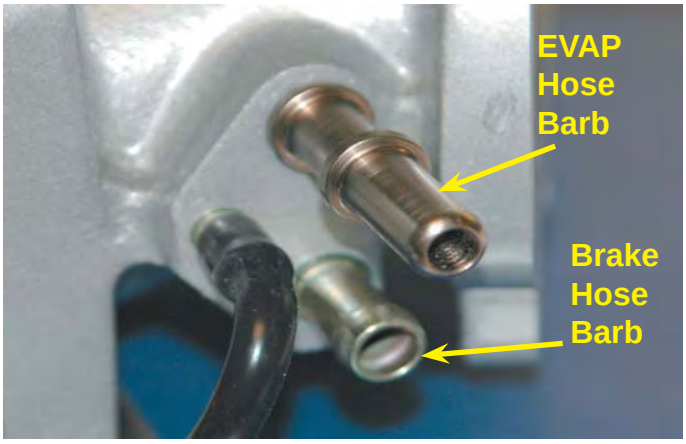
128. Here is the driver side PCV hose assembled.

129. Install the 90-degree PCV fitting onto the barb located on the driver side cam cover.

130. Install the remaining end of the 11/32 vacuum hose on the barb to the brake booster check valve.

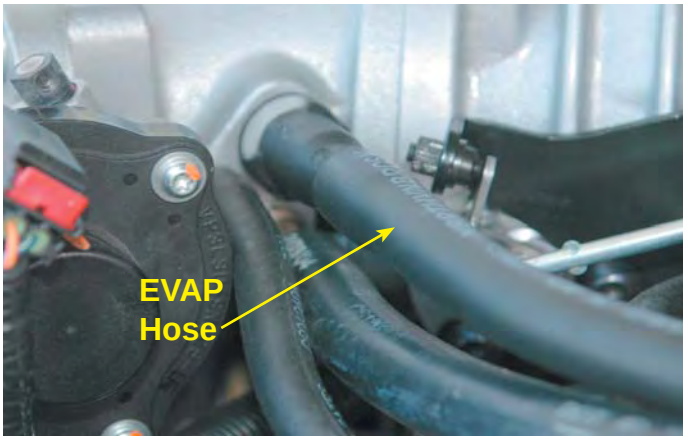


131. Install the vacuum hose onto the barb located on the driver side of the supercharger inlet manifold.



132. Locate the EVAP hose previously removed. Connect the hose to the upper barb on the supercharger inlet manifold.

133. Connect the EVAP hose to the upper barb located on the driver side of the inlet manifold as shown.

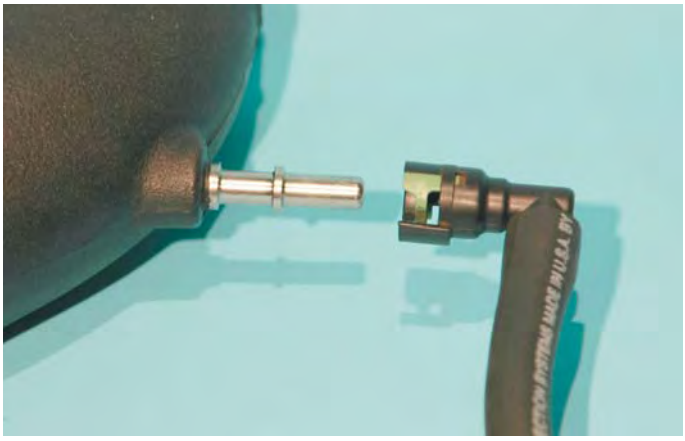


134. Remove the fittings from the end of the passenger side PCV line.

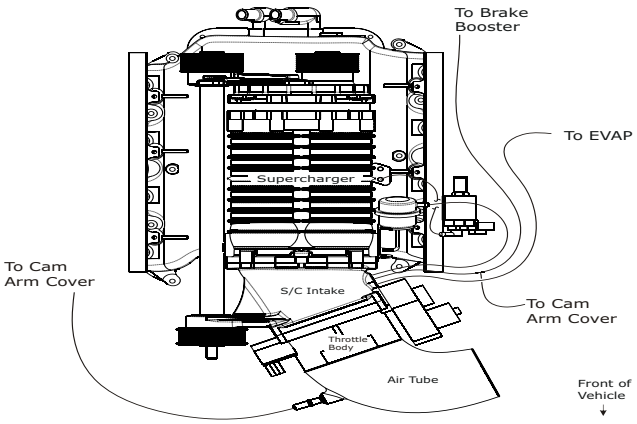
135. Install the fittings removed in the last step into the remaining length of the 3/8” hose supplied.

136. Connect the end of the new PCV line to the passenger side cam cover barb. Route the hose toward the front of the vehicle.

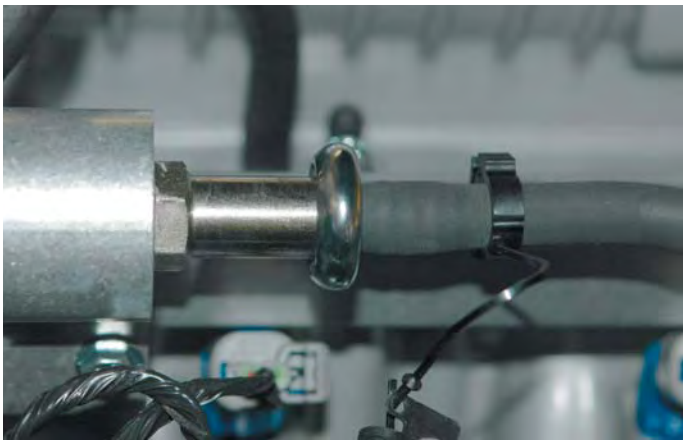
137. Connect the remaining end of the new PCV line to the barb on the side of the new air tube assembly.



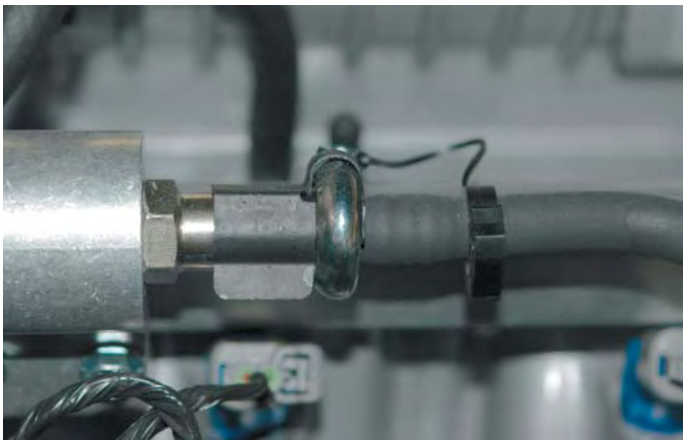
138. Here is a diagram of the hose routing.



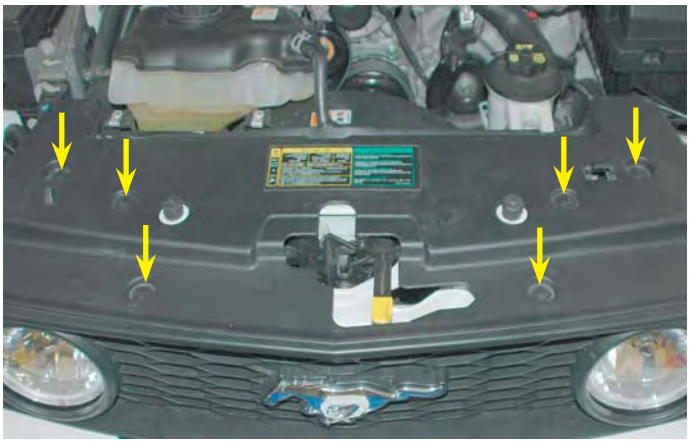
139. Install the fuel line connector onto the barb on the fuel manifold. Firmly push the connector until you feel it snap into place. Pull on fuel line to ensure it cannot be removed.



140. Install the fuel line lock clip onto the fuel manifold. Ensure that the fuel line is properly connected.



141. The following steps are for Intercooled vehicles only! Non-intercooled vehicles please skip to step 219. Remove the (6) push-rivets that secure the radiator shroud.



142. Remove the push-rivets by first prying up the center of the rivet using a small straight blade screwdriver and the remove the outer body of the rivet complete.

143. Remove the radiator shroud.

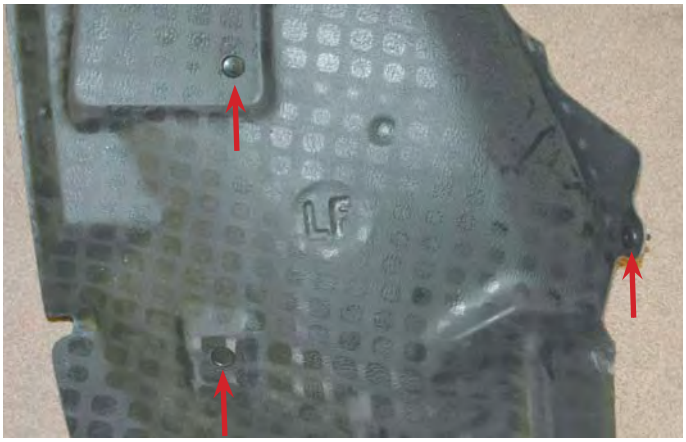
144. Raise the vehicle on an approved lift or jackstands. Locate the (7) fasteners that retain the lower splash shield.

145. Remove the (7) fasteners using a 6mm socket wrench.

146. Remove the lower splash shield from the vehicle.

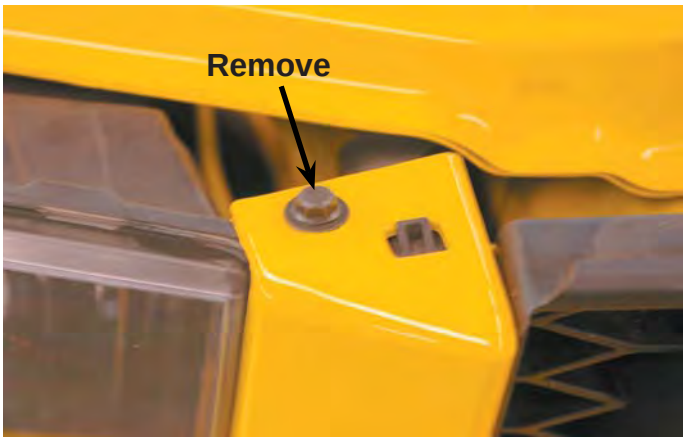
147. In both of the front wheel wells remove the (3) screws that secure the inner plastic fender well using a crosshead screwdriver.

148. In each of the front wheel wells remove the (3) push-rivets that secure the inner plastic fender well. (Left front shown.)

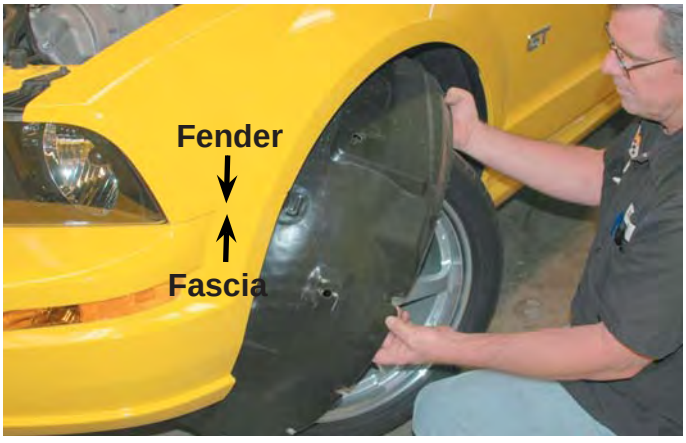


149. Remove the push-rivets by pulling up on the center portion and then removing the complete rivet assembly as shown.

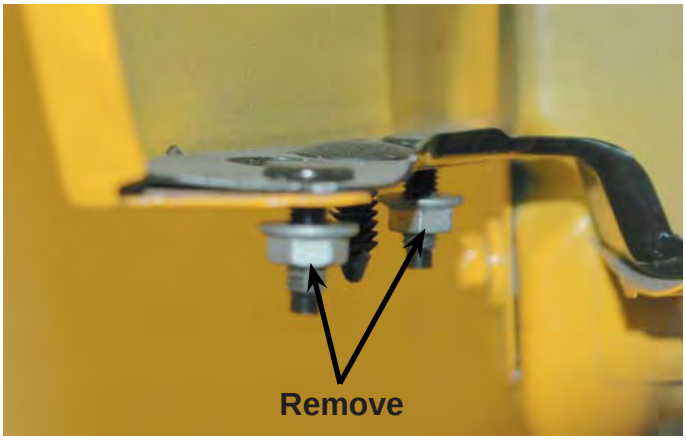
150. Between the grille and headlight on both sides of the vehicle, remove the bolt on the top of the fascia.



151. Carefully remove the front plastic fender wells from both sides of the vehicle. Note: Where the front fascia meets the fender.

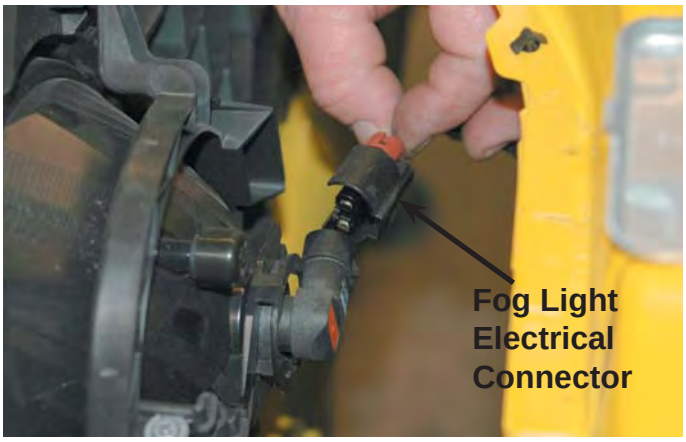


152. On the inside of the fender where the fender meets the fascia, remove the (2) nuts using a 10mm socket wrench. (The fascia has been removed in this photo for clarity.)

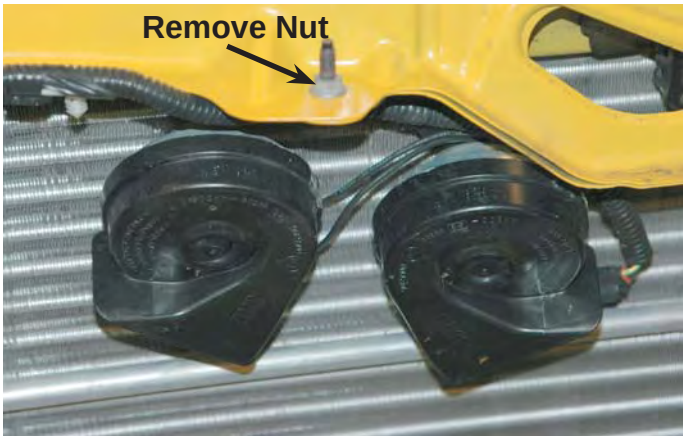


153. Carefully pull the fascia forward a few inches to remove the final connections.

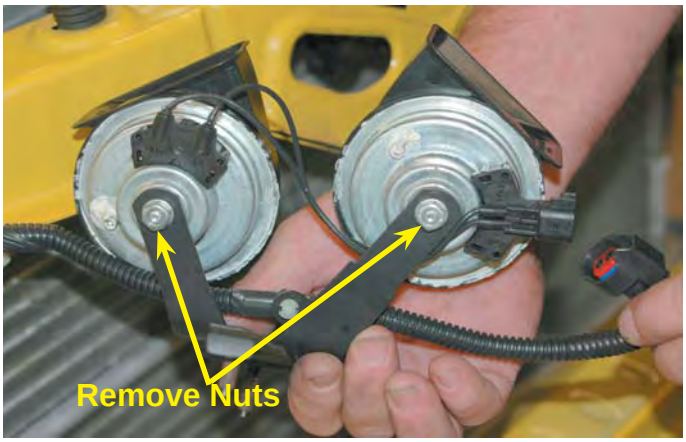
154. With the front fascia pulled forward a few inches, remove the fog light electrical connectors by squeezing the release triggers and pulling the connectors free. The front fascia can now be completely removed and set aside.



155. Remove the nut that secures the horn-mounting bracket using a 10mm wrench.

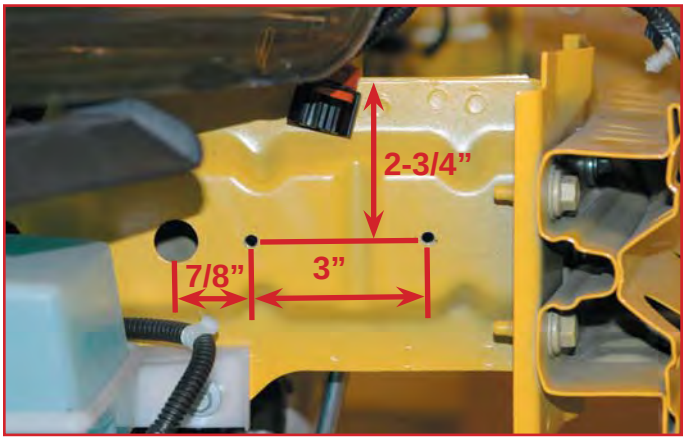


156. Squeeze the trigger on the electrical connector to remove it from the horns. Next, remove the horn from the original mounting bracket using a 10mm wrench.



157. Using the original mounting nuts, mount the horns onto the new horn bracket supplied as shown. Tighten the mounting nuts securely using a 10mm wrench.

158. On the outside of the right (passenger side) frame rail, directly behind the bumper structure, make (2) 3/16” holes using a drill in the locations shown.

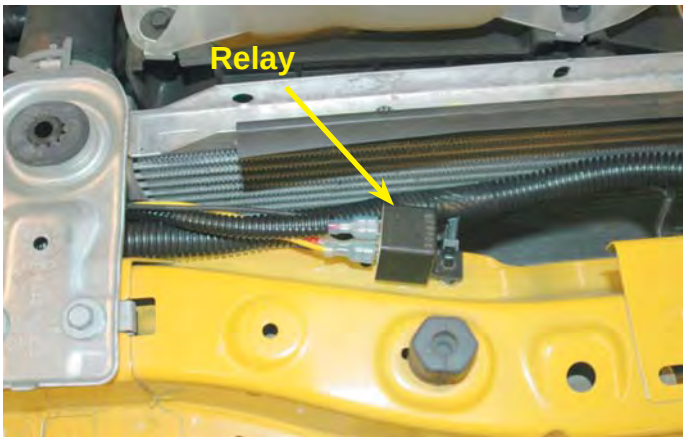


159. Install the horn-mounting bracket onto the frame using the (2) self-tapping bolts supplied installed into the new holes. Tighten the bolts securely using a 10mm socket wrench.

160. Here is the horn assembly installed.

161. Install the horn electrical connector.

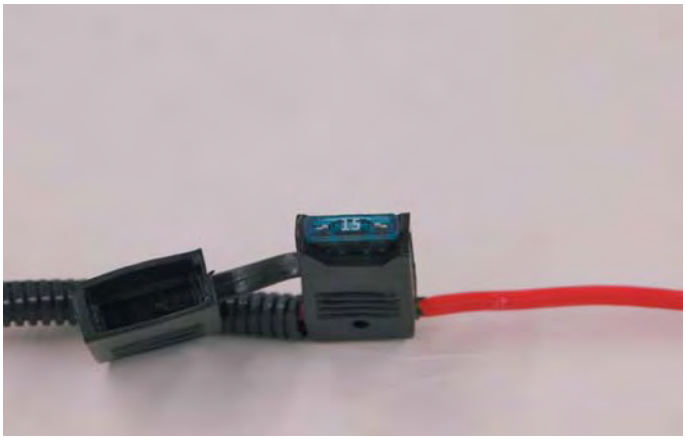
162. Mount the intercooler pump relay in the location shown by passing a ty-strap through the hole in its mounting tab and through a hole in the upper cross member.



163. Locate the ground connections on the top surface of the upper cross member.

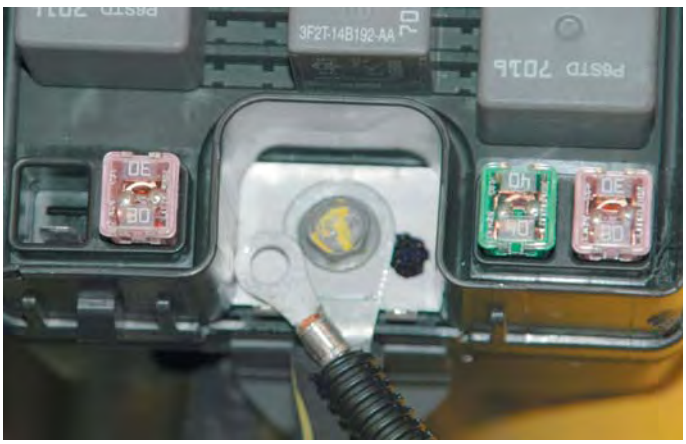
164. Remove the bolt from either ground connections using a 10mm wrench. Pass the bolt through the ring connector of the BLACK wire from the intercooler relay. Tighten the bolt securely.

165. Locate the black plastic fuse holder in the larger RED power wire. Install the 15-amp fuse supplied as shown, and then snap the attached cover on the fuse holder.

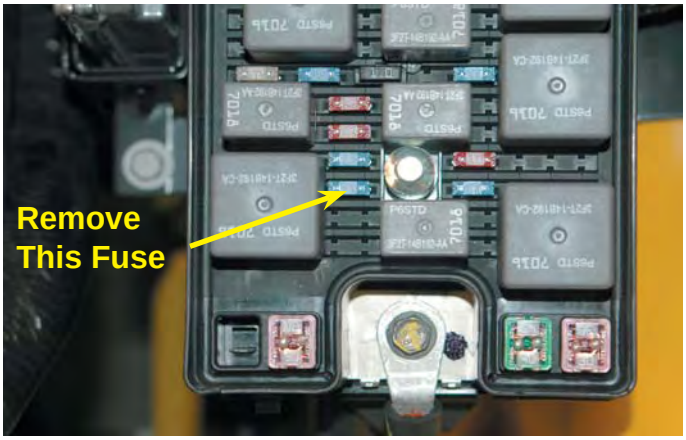


166. Remove the top cover of the fuse/relay center.

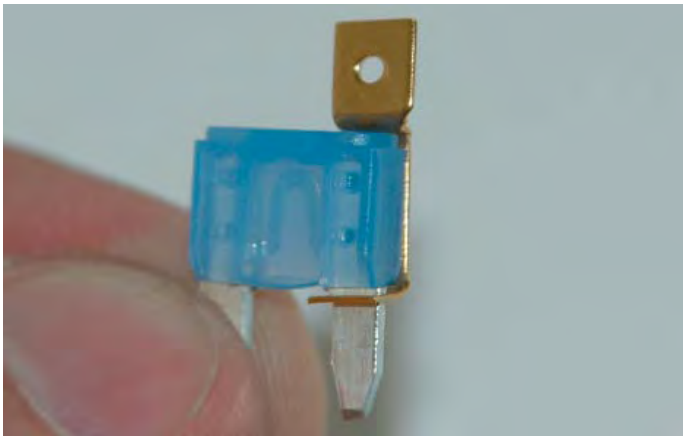
167. Remove the bolt securing the battery cable connector using a 10mm socket wrench. Place the ring connector of the large RED power wire of the intercooler pump relay under the battery cable connector. Re-install the bolt the ring connectors, tightening the bolt securely.



168. Locate the 15-amp fuse located in the #40 position and remove it.



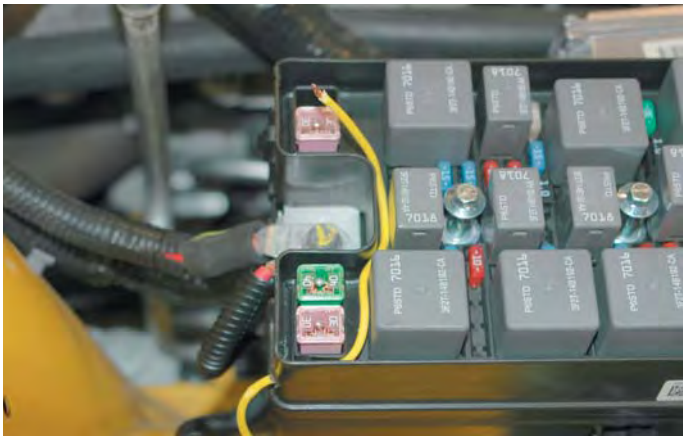
169. Install the “fuse-tap” supplied onto the fuse as shown.



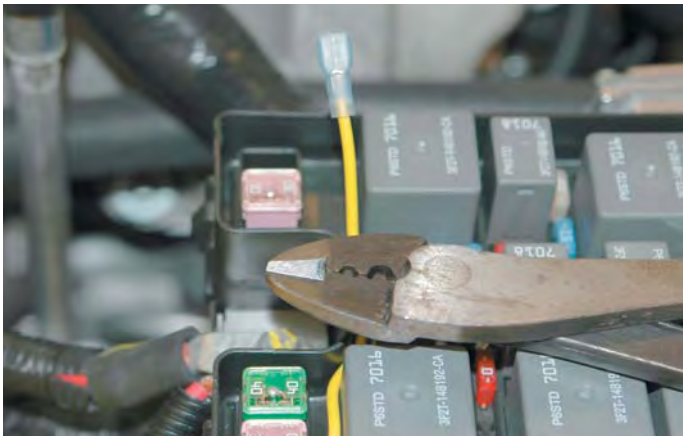
170. Re-install the fuse into its original position with the fuse-tap installed.

171. Use a 1/8” drill to make a hole in the right rear corner of the fuse/relay center as shown.

172. Route the YELLOW wire from the intercooler pump relay to the fuse/relay center. Insert the YELLOW wire through the new hole and into the fuse/relay center as shown.



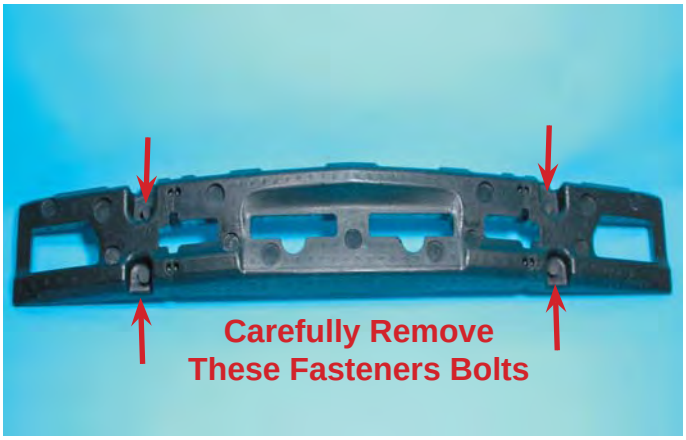
173. Strip the insulation from the end of the YELLOW wire and crimp on the 3/16" female spade connector supplied.



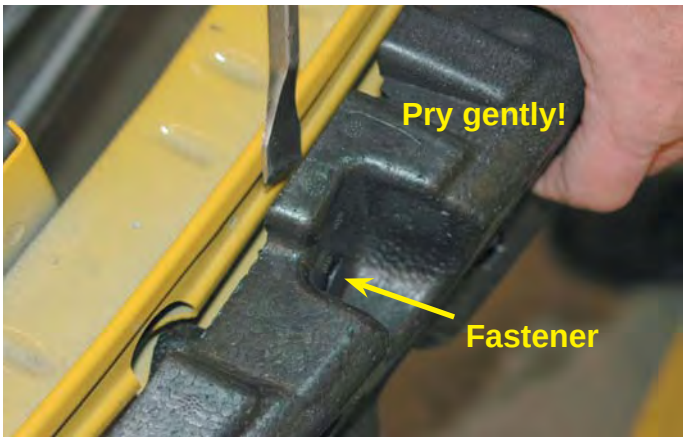
174. Connect the female spade connector onto the end of the fuse-tap as shown. Replace the cover of the fuse/relay center ensuring that both the RED and YELLOW wires are secure and that the cover is properly snapped into place.

175. Carefully remove the upper piece of the bumper padding by lifting up to remove it.

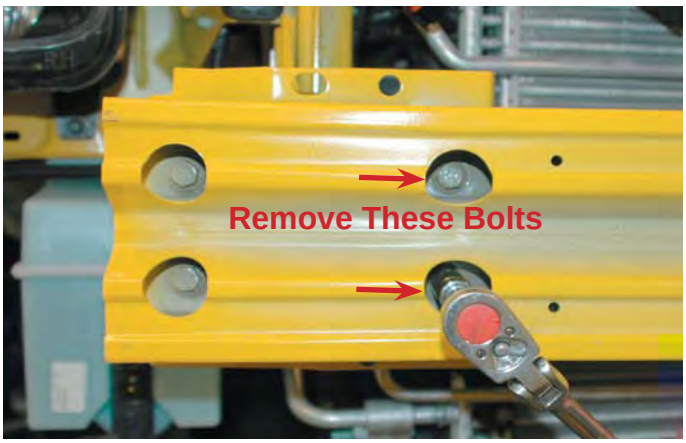
176. Carefully remove the bumper front padding by removing the (4) plastic fasteners.



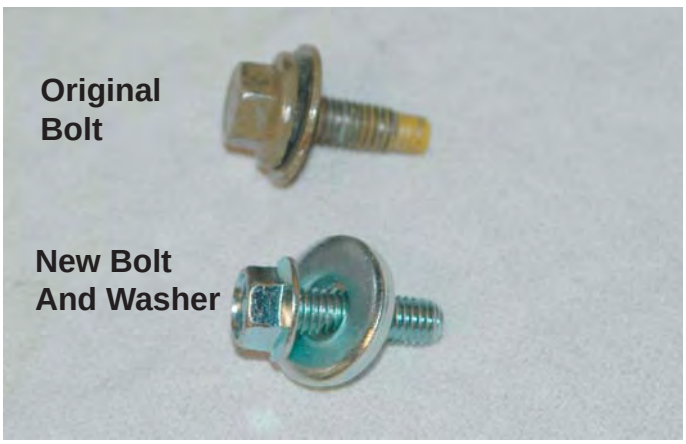
177. Remove the (4) bumper fasteners by carefully prying the padding away from the bumper using a wide flat blade screwdriver or gasket scraper and then pulling the plastic fastener free.



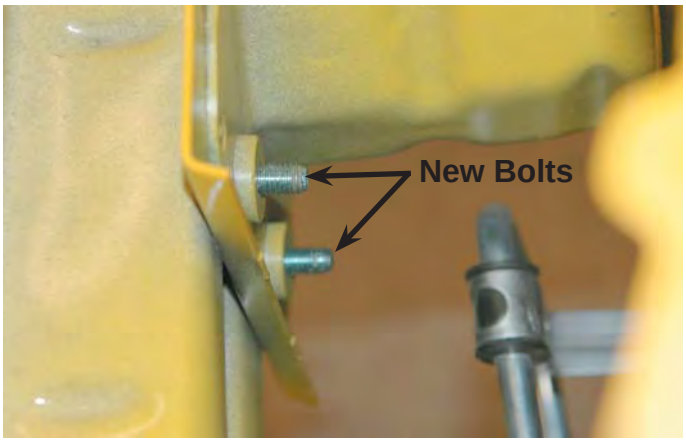
178. On the passenger side of the vehicle, remove the inner (2) bumper mounting bolts using a 14mm socket wrench.



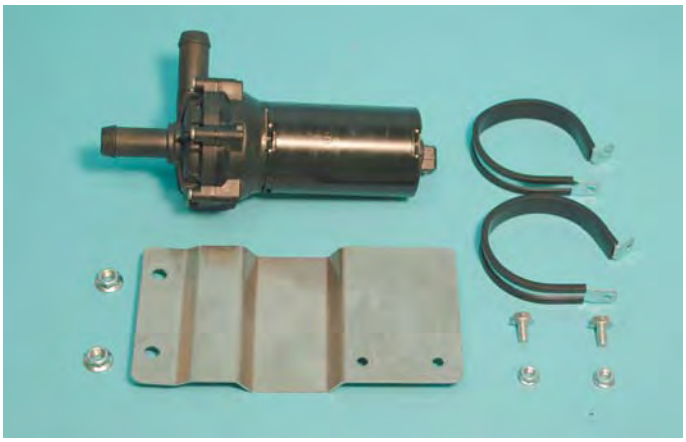
179. Replace the (2) original bumper bolts with the new, longer bolts and washers supplied. Torque the bolts to 45 ft-lbs (61 Nm) using a 14mm socket and torque wrench.



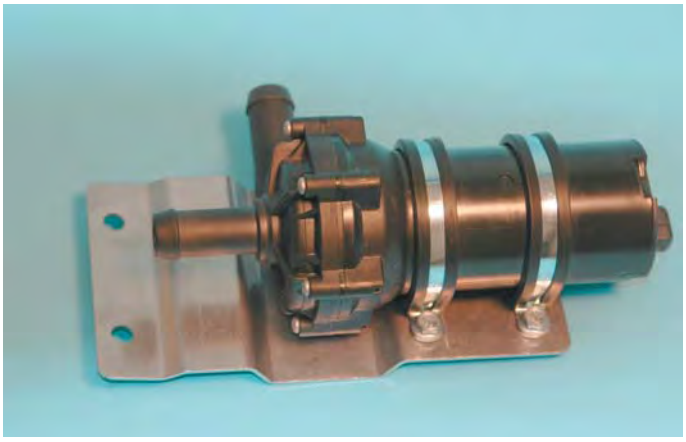
180. Note how the threaded ends of the new bolts protrude from the back of the bumper structure. This is where the intercooler pump and bracket will mount.



181. Here is the intercooler pump and its mounting hardware. Note that the (2) larger 8mm nuts will be used to mount the bracket and pump to the vehicle.

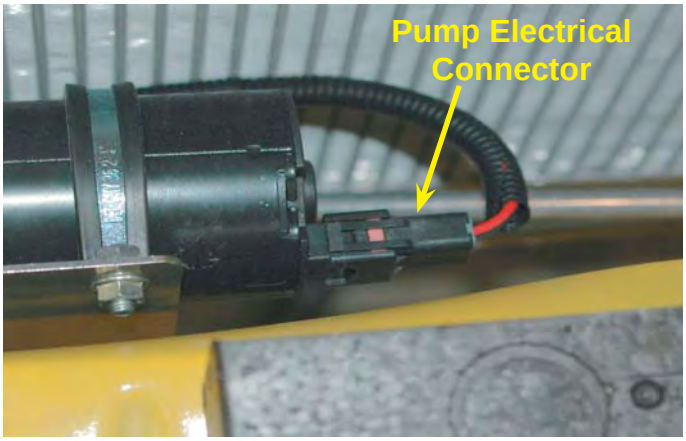


182. Attach the intercooler pump to the bracket as shown using Adel clamps shown using the 6 x 16mm bolts and nuts supplied. Tighten the bolts securely using a 10mm wrench.

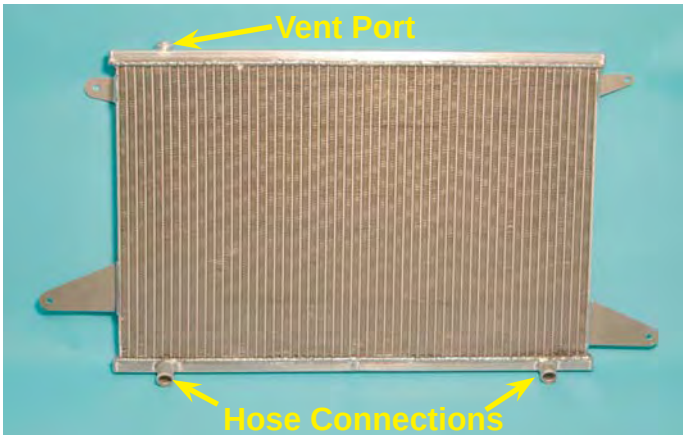


183. Here is the intercooler bracket and pump-mounted in position on the exposed ends of the (2) new bumper bolts previously installed. Use the (2) 8mm nuts shown in the previous step to mount the bracket to the bumper bolts. Tighten the nuts securely using a 12mm wrench.

184. Route the Red and Black wires with the pump electrical connector from the pump relay forward to the intercooler pump. Plug the connector into the end of the pump.

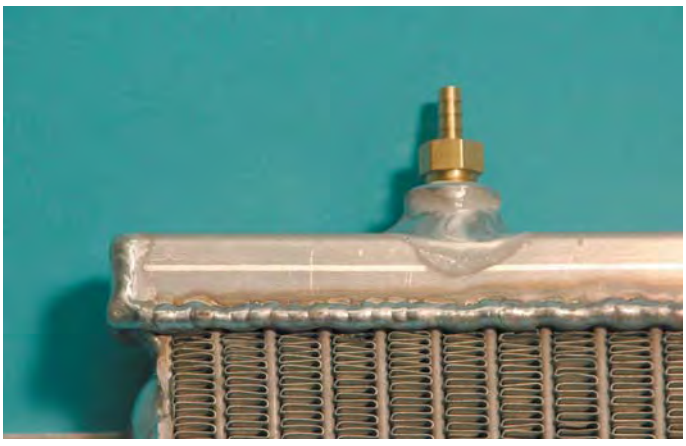


185. Here is the Intercooler heat exchanger and this is the position it will mount on the vehicle. Note: The hose connections are on the bottom and the vent port on the top

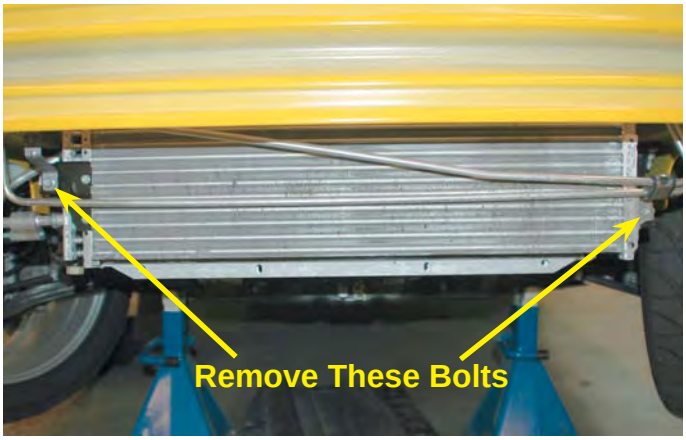


186. Locate the vent port fitting supplied. Apply some Teflon pipe tape or “dope” to the threaded end of the fitting.

187. Carefully install the fitting securely into the vent port on the top of the heat exchanger using a 11mm wrench. Do not over tighten!

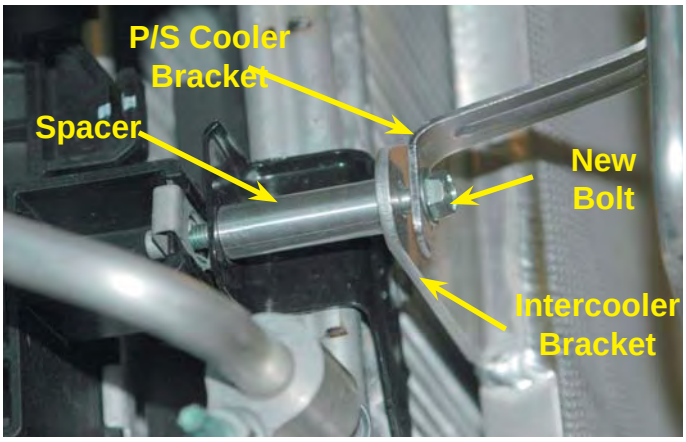


188. Remove the power steering cooler mounting bracket bolts using a 10mm socket wrench. Allow the power steering cooler to carefully hang out of the way as you position the intercooler heat exchanger.

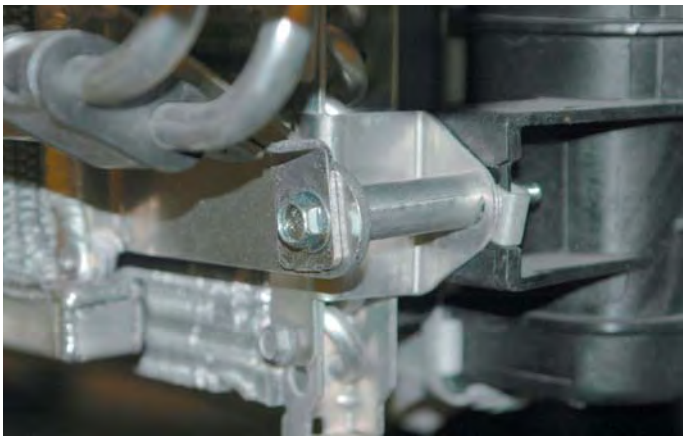


189. The intercooler heat exchanger will mount in front the air conditioning condenser and behind the power steering cooler.

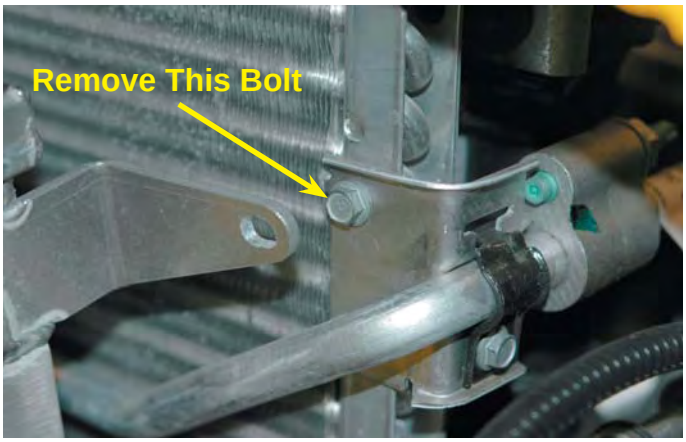
190. Starting on the passenger side location where the power steering cooler bracket mounted, replace the power steering cooler mounting bolt with the longer bolt and spacer supplied. Pass the bolt through the power steering mounting bracket, then the intercooler heat exchanger bracket, next the tubular spacer supplied and finally into the original hole. Do not completely tighten the bolt at this time, leave them finger tight until all (4) fastener of the heat exchanger are in place.



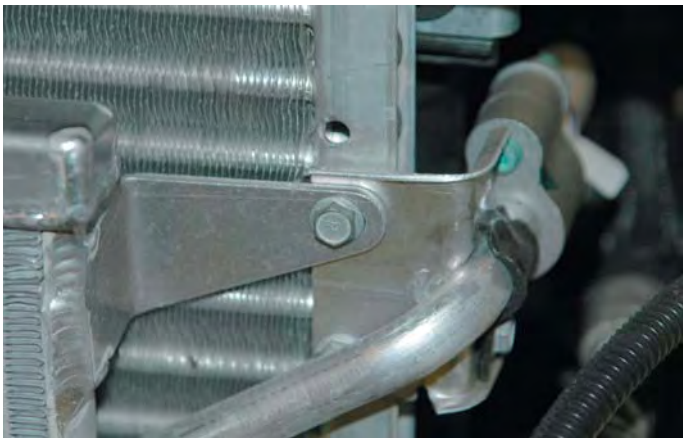
191. On the driver side power steering cooler bracket location, replace the power steering cooler mounting bolt with the longer bolt and spacer supplied. Pass the bolt through the power steering mounting bracket, then the intercooler heat exchanger bracket, next the tubular spacer supplied and finally into the original hole. Do not completely tighten the bolts at this time, leave them finger tight until all (4) fastener of the heat exchanger are in place.



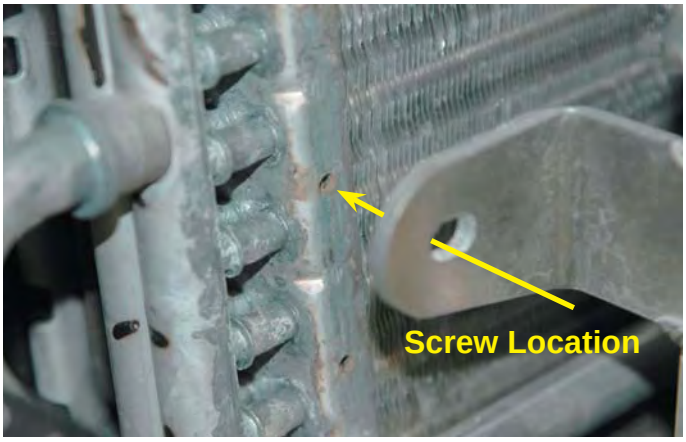
192. On the upper right front face of the air conditioner condenser, locate the small bolt shown and remove it using a 8mm socket wrench.



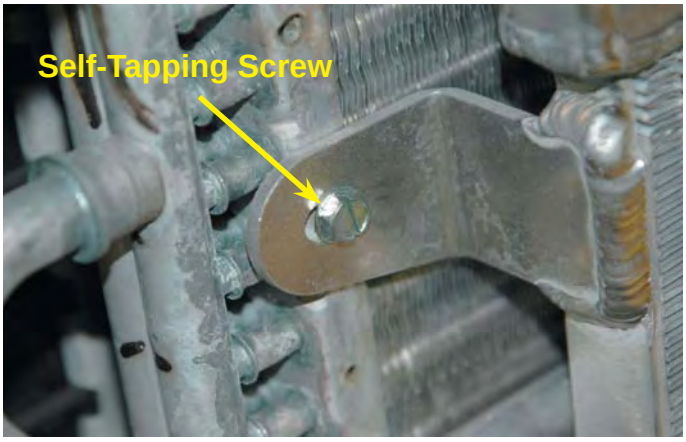
193. Position the heat exchanger mounting bracket over the bolt hole and pass the original bolt through the bracket and into the original hole. Tighten the bolt securely using a 8mm socket wrench.



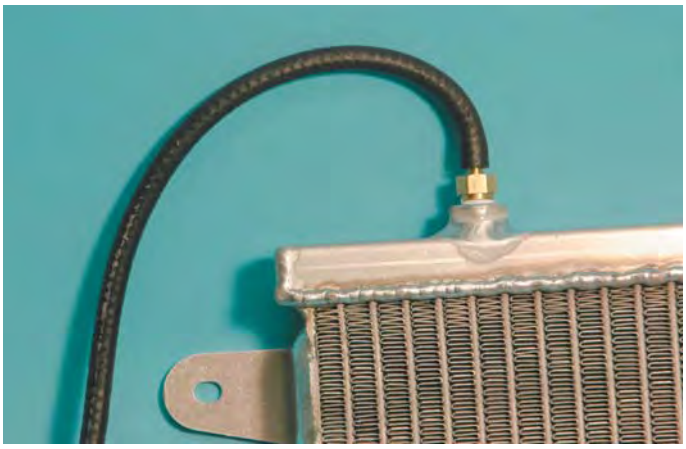
194. Note that the heat exchanger mounting bracket aligns over a small bolt hole in the air conditioner condenser.



195. Align the bracket with the hole in the air conditioner condenser and install the self-tapping screw supplied into the hole. Tighten the self-tapping screw using a 8mm wrench and then tighten the lower mounting bolts securely at this time using a 10mm socket wrench.



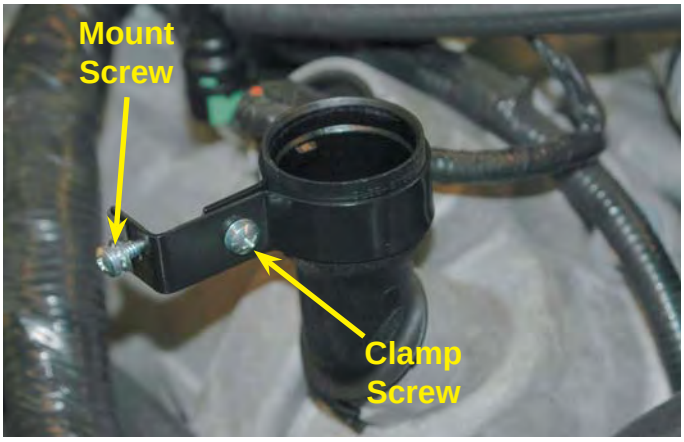
196. Install the length of 1/8” hose onto the small barb on the vent port fitting. Route the hose rearward towards the engine. The remaining end of the hose will be connected in a later step.



197. Here is the heat exchanger installed. Carefully re-attach the (2) pieces of bumper padding by inserting the (4) plastic fasteners into their original holes in the bumper structure.

198. Here is the intercooler filler bottle, cap, oil neck mounting clamp and bottle clamp.

199. Remove the engine oil filler cap. Install the oil neck-mounting bracket onto the engine oil filler neck by loosening the clamp screw to allow the bracket to slide around the neck. Point the bracket towards the passenger side fender and tighten the clamp screw securely. Remove the mount screw. Replace the engine oil filler cap.



200. Pass the mount screw through the hole in the mounting tab on the bottle and then back into its hole in the oil neck-mounting clamp. Tighten the mount screw securely. (Shown removed from the oil neck for clarity.) Install the cap onto the filler bottle.

201. From the length of 3/4” hose supplied, cut a 30” length. Connect (1) end of the 32” length of hose to the lower left intercooler barb on the rear of the supercharger manifold. Secure the hose with the spring clamp supplied hose supplied to the barb and secure it using a #10 clamp supplied.

202. Connect the remaining end of the 32” length hose to the rear barb on the filler bottle assembly. Secure the hose with the spring clamp supplied hose supplied to the barb and secure it using a #10 clamp supplied.

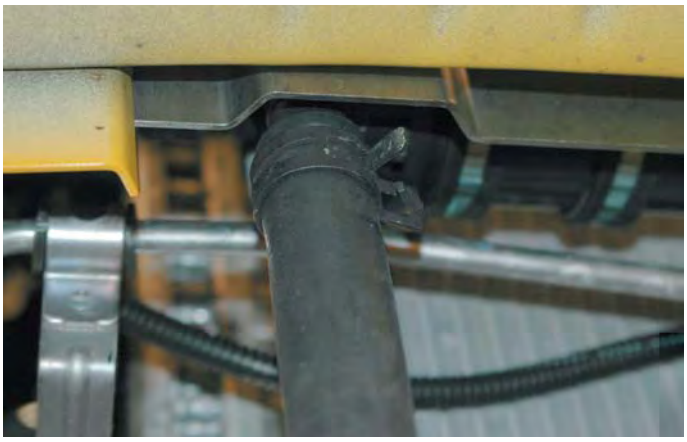
203. Using the “Elbow” hose supplied cut 2” from the short end and 11” from the long end.

204. Connect the short end of the elbow hose to the inlet barb of the intercooler pump. Secure the hose with the spring clamp supplied

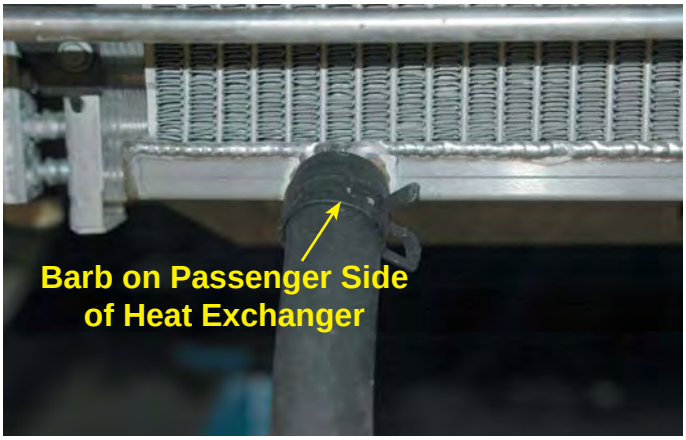
205. Connect the remaining leg of the elbow hose to the front barb of the intercooler filler bottle with the spring clamp supplied

206. Route the heat exchanger vent hose up to the small barb on the filler bottle and connect it.

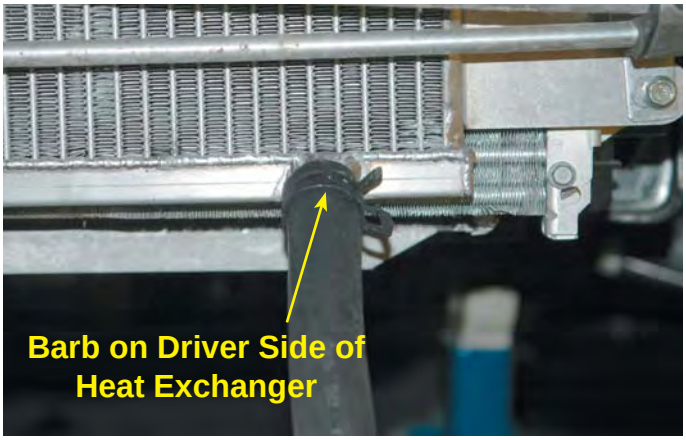
207. From the length of 3/4” hose supplied, cut a 12” length. Connect (1) end of the 12” length of hose to the lower barb on the intercooler pump. Secure the hose with the spring clamp supplied hose supplied to the barb and secure it using a #10 clamp supplied.



208. Connect the remaining end of the 12” hose to the barb passenger side (right) of the heat exchanger with the spring clamp supplied



209. Connect (1) end of the remaining length of 3/4” hose to the barb on the driver side (left) of the heat exchanger with the spring clamp supplied.

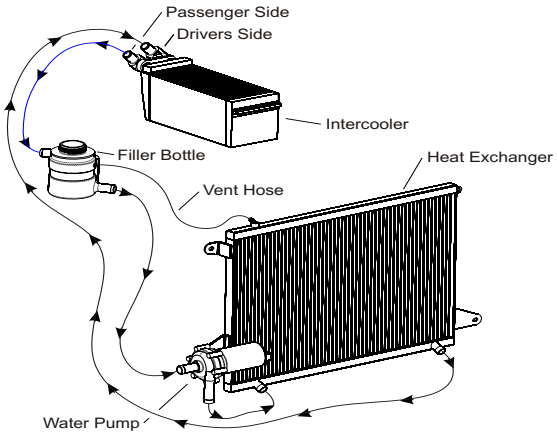


210. Route this hose across the front of the vehicle and pass the radiator on the right side. Leave this “loop” slack, as it will lie into the front fascia when it is re-installed. Pass the hose along the right side of the engine with the other intercooler hose and the re-routed heater hose. Secure these hoses together in (1) bundle with the black plastic tie straps supplied.

211. Finally connect the remaining end of 3/4” hose to the upper or left barb of the intercooler manifold with a spring clamp supplied.

212. Using a 50-50 mixture of radiator coolant and de-ionized or distilled water, fill the intercooler system. Remove the cap from the intercooler filler bottle and fill the intercooler system until the fluid level is 1” from the bottom of threaded neck. Replace the cap after filling the system. Note that the system when full will hold about 1.5 gallons (6 liter.) You will not be able to will the system completely until a later step.

213. Here is the intercooler hose routing diagram.



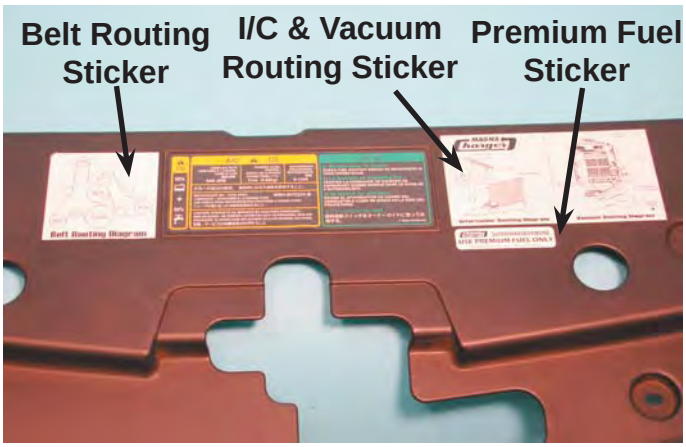
214. With the intercooler system installed, reinstall the front fascia. Replace the fascia with its original fasteners and reconnect the driving light connectors.

215. Replace the lower splash shield and its (7) fasteners.

216. Replace the radiator shroud and the (6) push-rivets.

217. Re-install the inner plastic fender wells with their original fasteners.

218. Install the belt routing, intercooler/ vacuum routing and the (1) premium fuel stickers to the top of the radiator shroud as shown.



219. Install the second premium fuel sticker to the inside of the fuel door as shown.

220. Re-connect the negative (-) battery clamp using a 7mm wrench.

221. On the bottom edge of the driver side instrument panel, locate the OBDII service port.

222. Install the supercharged engine programming using the enclosed SCT program module. Important! Follow the instructions enclosed with the Program Module EXACTLY!

223. After loading the supercharged engine program, turn the ignition key to the ON position but do not start the vehicle. Continue to fill the intercooler system through the Filler bottle until the fluid level is 1” from the bottom of threaded neck. When the system is full of coolant, you should be able to see the coolant swirl around in the bottle quite vigorously with the ignition on. Replace the cap after filling the system.

224. Use only premium fuel, 91 octane or higher. Start the vehicle for 5 seconds and shut off. Check the supercharger installation for fuel leaks and supercharger belt alignment. Check radiator and intercooler fluid levels.

225. Test drive vehicle for the first few miles under normal driving conditions, listen for any noises, vibrations, engine miss fire or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, which is normal. Check the intercooler filler bottle level as air will be purged from the system in the first minutes of running and more coolant may be needed. Re-check the radiator reservoir coolant level and add coolant as necessary.

226. After the initial test drive gradually work the vehicle to wide open throttle runs, listen for any engine detonation (pinging). Use only premium fuel, 91 octane or better. If engine detonation is present let up on the throttle immediately. Most detonation causes are low octane gasoline still in the tank. If you have questions about your vehicles performance, please check with your installation facility or call Magna Charger at (805) 289-0044, Monday through Friday, 8 a.m. to 5 p.m.

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